COMPARISON OF KNOWLEDGE, ATTITUDES AND PRACTICES ON EXCLUSIVE BREASTFEEDING BETWEEN PRIMIPAROUS AND MULTIPAROUS MOTHERS ATTENDING WAJIR DISTRICT HOSPITAL, WAJIR COUNTY, KENYA

BY

MAHAT JIMALE MOHAMED (BSC. FND)
H60/CTY/PT/21275/2012

A RESEARCH THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF SCIENCE (FOOD, NUTRITION AND DIETETICS) IN THE SCHOOL OF APPLIED HUMAN SCIENCES OF KENYATTA UNIVERSITY

MAY, 2016
DECLARATION

I declare that this thesis is my original work and has not been submitted for a degree in any other University, or any other award

Signature ……………………… Date ………………………

Mahat Jimale Mohamed - H60/CTY/PT/21275/2012
Department of Foods, Nutrition and Dietetics

Supervisors

We confirm that the work reported in this thesis was carried out by the candidate and has been submitted with our approval as university supervisors.

Signature ……………………… Date……………………………

Sophie Ochola (PhD)
Department of Foods, Nutrition and Dietetics
Kenyatta University

Signature ……………………… Date……………………………

Victor O. Owino (PhD)
Department of Human Nutrition and Dietetics
The Technical University of Kenya
DEDICATION

This thesis is dedicated to the almighty God, my wife Fatuma Abass Ahmed, my mother Mrs. Gamana Abikar and father Mr. Jimale Mohamed and all my friends who made the whole study process a success.
ACKNOWLEDGEMENTS

My special appreciation goes to my supervisors Dr. Sophie Ochola and Dr. Victor O. Owino for their patience and unwavering willingness to provide direction and support throughout the study. My sincere appreciation also goes to the statistician Dr. Festus Kiplamai for his contribution in data analysis for this study. I am also grateful to all the members of the Food, Nutrition and Dietetics department of Kenyatta University and my student colleagues for their moral support.

My sincere gratitude is also extended to the study participants and the healthcare providers in Wajir County hospital for their warm welcome and support throughout the data collection. I also take this opportunity to thank the research assistants who collected quality data. Last, but certainly not least, I would like to thank my family for their willingness to sacrifice a portion of their lives and time so that I could complete this master’s degree. Most of all I would like to thank my wife Fatuma for her unmatched support and love and for certain without her; this degree would never have been possible.
# TABLE OF CONTENTS

DECLARATION ...................................................................................................................................... ii
DEDICATION .......................................................................................................................................... iii
ACKNOWLEDGEMENTS ........................................................................................................................ iv
TABLE OF CONTENTS .......................................................................................................................... v
LIST OF TABLES .................................................................................................................................... viii
LIST OF FIGURES ................................................................................................................................. x
DEFINITION OF TERMS ....................................................................................................................... xi
ABBREVIATIONS AND ACRONYMS ................................................................................................. xi
ABSTRACT .............................................................................................................................................. xv

## CHAPTER ONE: INTRODUCTION ................................................................................................. 1

1.1 Background to the Study ................................................................................................................ 1
1.2 Statement of the Problem ................................................................................................................ 3
1.3 Purpose of the Study ....................................................................................................................... 5
1.4 Objectives of the Study ................................................................................................................... 6
1.5 Study Hypotheses ........................................................................................................................... 6
1.6 Significance of the Study ................................................................................................................ 7
1.7 Delimitation of the Study ............................................................................................................... 7
1.8 Limitations of the Study ............................................................................................................... 7
1.9 Conceptual Framework ............................................................................................................... 7

## CHAPTER TWO: LITERATURE REVIEW .................................................................................... 10

2.1 Overview of Exclusive Breastfeeding ......................................................................................... 10
2.2 Benefits of Exclusive Breastfeeding ........................................................................................ 10
2.3 Prevalence of Exclusive Breastfeeding (EBF) ......................................................................... 11
2.4 Maternal Knowledge on Exclusive Breastfeeding (EBF) ......................................................... 13
2.5 Maternal Attitudes Towards Exclusive Breastfeeding (EBF) ............................................... 14
2.6 Factors Associated with Exclusive Breastfeeding Practices .................................................. 16
2.7 Sources of Information on Breastfeeding .............................................. 21
2.8 Summary of Literature Review .......................................................... 22

CHAPTER THREE: METHODOLOGY ......................................................... 24
3.1 Research Design .............................................................................. 24
3.2 Measurement of Study Variables ...................................................... 24
3.3 Study Location .................................................................................. 25
3.4 Target Population ............................................................................ 25
3.5 Sampling Techniques ....................................................................... 26
3.6 Sample Size Determination ............................................................... 28
3.7 Research Instruments ...................................................................... 29

CHAPTER FOUR: RESULTS ........................................................................ 34
4.1 Characteristics of the Study Population ............................................ 34
4.2 Delivery History of the Mothers ....................................................... 39
4.3 Maternal Health Status ..................................................................... 41
4.4 Infant Characteristics ....................................................................... 43
4.5 Infant Feeding Practices ................................................................... 46
4.6 Infant Feeding Practices Since Birth ............................................... 48
4.7 Exclusive Breastfeeding Practices ..................................................... 49
4.8 Maternal Knowledge on Breastfeeding Issues ............................... 51
4.9 Maternal Attitude on Breastfeeding Issues ..................................... 54
4.10 Sources and Content of Breastfeeding Information ....................... 57
4.11 Maternal Knowledge, Attitudes/Perceptions and Practices of Exclusive Breastfeeding Based on Qualitative Data from Focus Group Discussions 58

CHAPTER FIVE: DISCUSSIONS ................................................................. 76
5.1 Introduction ....................................................................................... 76
5.2 Maternal Knowledge on Exclusive Breastfeeding ............................ 76
CHAPTER SIX .................................................................................................................. 85
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS .................................................................. 85
6.1 Summary of the Findings ............................................................................................................. 85
6.2 Conclusions .................................................................................................................................. 86
6.3 Recommendations ......................................................................................................................... 87
REFERENCES ................................................................................................................................. 90
APPENDICES ............................................................................................................................. 101
APPENDIX A: Consent Form .............................................................................................................. 101
Appendix B: Assent for Under 18 Years .............................................................................................. 103
APPENDIX C: Letters of Permission .................................................................................................. 105
APPENDIX D: Budget for the Study ................................................................................................... 106
APPENDIX E: Work plan for the study ............................................................................................... 107
APPENDIX F: Questionnaire (in English) .......................................................................................... 108
APPENDIX G: Questionnaire (in Somali) ........................................................................................... 122
Appendix H: Focus Group Discussion Guide ...................................................................................... 135
APPENDIX I: Key Informant Interview Guide .................................................................................... 136
APPENDIX J: Research Clearance Permit Identification ................................................................. 137
APPENDIX K: Research Clearance Permit ....................................................................................... 138
APPENDIX L: Ethical Review Approval .............................................................................................. 139
LIST OF TABLES

Table 2.1: EBF rates Among Some of the African Countries ........................................12
Table 4.1: Maternal Socio-Demographic Characteristics .............................................35
Table 4.2a: Socio-Economic Characteristics of the Mothers .........................................37
Table 4.2b: Socio-economic Characteristics of the Household .....................................38
Table 4.3: Maternal Morbidity .....................................................................................42
Table 4.4: Maternal Breastfeeding Complications .......................................................43
Table 4.5: Infant Characteristics ..................................................................................44
Table 4.6: Prevalence of Morbidity Among Infants .......................................................45
Table 4.7: Early Infant Feeding Practices .....................................................................47
Table 4.8: Maternal Knowledge on Breastfeeding ......................................................53
Table 4.9: Maternal Knowledge on the Practice of EBF ..............................................54
Table 4.10: Maternal Attitude Towards Breastfeeding ...............................................56
Table 4.11: Maternal attitude Score and the Practice of EBF .......................................57
Table 4.12: Sources and Content of Breastfeeding Information ..................................58
Table: 4.13a Summary of the Findings on Maternal Knowledge, Attitude and Practices of Exclusive Breastfeeding From focus Group Discussions ....64
Table: 4.13b Summary of the Findings on Maternal Knowledge, Attitude and Practices of Exclusive Breastfeeding from Focus Group Discussions ....65
Table 4.14: Summary of the Key Informant Interviews Findings on Maternal Knowledge, Attitude and Practices of Exclusive Breastfeeding ..........70
Table 4.15: Maternal Demographic Characteristics and their Association with Exclusive Breastfeeding for Infants 0-5 Months Old ......................72
Table 4.16: The influence of Maternal Knowledge on the Practice of EBF ..........72
Table 4.17: Maternal Knowledge Score and its Relationship with Exclusive Breastfeeding .................................................................73
Table 4.18: Maternal Attitude Score and its Association with EBF ...........................73
Table 4.19: Maternal Attitude and its Association with Exclusive Breastfeeding ....74
Table 4.20: Maternal Type and of Delivery Characteristics and Exclusive Breastfeeding .................................................................74
Table 4.21: Relationship Between Infant Morbidity and EBF .................................75
LIST OF FIGURES

Figure 1.1: Conceptual Framework on Determinants of Infant Feeding Practices......8
Figure 3.1: Flow Chart on the Sampling Procedure ..............................................27
Figure 4.1: Maternal Place of Delivery .................................................................40
Figure 4.2: Maternal Type of Delivery .................................................................41
Figure 4.3: Infant Breastfeeding Practices Since Birth ...........................................49
Figure 4.4: Exclusive Breastfeeding Feeding Practices for Infants 0-5 Months Old.50
Figure 4.5: Monthly EBF Rates Based on 24 Hour Recall ......................................51
DEFINITION OF TERMS


Bottle-feeding: Feeding mode where the child receives a liquid or semi-solid foods from a bottle with a nipple/teat. This term applies irrespective of the nature of the liquid or semi-liquid (WHO, 2008).

Breast milk Substitute: Any food marketed or otherwise represented as partial or total replacement for breast milk, whether or not it is suitable for the purpose (www.unicef.org/nutrition; accessed 20th May 2015).

Complementary food: Any food whether manufactured or locally prepared, suitable as a complement to breast milk or to infant formula, when either become insufficient to satisfy the nutritional requirements of the infant. Such food is also commonly called "weaning food" or breast-milk supplement" (http://www.who.int/nutrition/publications/code; accessed 11th May 2015).

Exclusive breastfeeding: Is defined as giving no other food or drink, not even water, except breast milk (including milk expressed or from a wet nurse) for the first 6 months of life, but allows the infant to receive ORS, drops and syrups (vitamins, minerals and medicines) (http://www.who.int/nutrition/publications/code; accessed 11th May 2015).

Infant formula: A breast-milk substitute formulated industrially in accordance with applicable Codex Alimentarius Standards, to satisfy the normal nutritional
requirements of infants up to between four and six months of age, and adapted to their physiological characteristics. Infant formula may also be prepared at home, in which case it is described as "home-prepared" (http://www.who.int/nutrition/publications/code; accessed 11th May 2015).

**Mixed feeding:** infant receives both breast milk and any other food or liquid including water, non-human milk and formula before 6 months (www.unicef.org/nutrition; accessed 20th November 2013).

**Partial breastfeeding:** Partial breastfeeding refers to a feeding mode where the baby receives breast milk but is also being given other food or food-based fluids, such as formula milk or weaning foods (WHO, 2008).

**Post-lacteal:** Fluid or food given after breastfeeding has commenced, within three days of birth (WHO, 2008).

**Predominant Breastfeeding:** "Predominant breastfeeding" means that the infant's predominant source of nourishment has been breast milk (including milk expressed or from a wet nurse as the predominant source of nourishment). However, the infant may also have received liquids (water and water-based drinks, fruit juice) ritual fluids and ORS, drops or syrups (vitamins, minerals and medicines) (http://www.who.int/nutrition/publications/code; accessed 11th May 2015).

**Pre-lacteal foods:** Any fluid or food given before initiation of breastfeeding (WHO, 2008).
**Parity:** Previous maternal experience of deliveries (http://www.merriam-webster.com; accessed 15th May 2016).

**Multiparous:** Mothers who have experienced one or more previous childbirths (http://www.merriam-webster.com; accessed 15th May 2016).

**Primiparous:** Mothers who have experienced their very first childbirth (http://www.merriam-webster.com; accessed 15th May 2016).
<table>
<thead>
<tr>
<th>ABBREVIATIONS AND ACRONYMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIDS</td>
</tr>
<tr>
<td>ANC</td>
</tr>
<tr>
<td>CHW</td>
</tr>
<tr>
<td>CWC</td>
</tr>
<tr>
<td>EBF</td>
</tr>
<tr>
<td>FGD</td>
</tr>
<tr>
<td>HIV</td>
</tr>
<tr>
<td>IYCF</td>
</tr>
<tr>
<td>IYCN</td>
</tr>
<tr>
<td>KDHS</td>
</tr>
<tr>
<td>KNH</td>
</tr>
<tr>
<td>KNBS</td>
</tr>
<tr>
<td>MCH</td>
</tr>
<tr>
<td>MOH</td>
</tr>
<tr>
<td>PMTCT</td>
</tr>
<tr>
<td>TBA</td>
</tr>
<tr>
<td>UNICEF</td>
</tr>
<tr>
<td>WABA</td>
</tr>
<tr>
<td>WHA</td>
</tr>
<tr>
<td>WHO</td>
</tr>
</tbody>
</table>
ABSTRACT

Exclusive breastfeeding (EBF) is recommended up to 6 months of age, with continued breastfeeding along with appropriate complementary foods up to two years of age or beyond. Failure to exclusively breastfeed for six months is associated with increased risk of childhood mortality and morbidity. There is paucity of information that analyses the disparity in Knowledge, Attitudes and Practices (KAP) among primiparous and multiparous mothers. This study aimed to compare the KAP of EBF between primiparous and multiparous mothers attending Wajir County hospital, Wajir County. In a cross-sectional comparative analytical study, KAP on EBF were assessed based on structured researcher-administered questionnaires, Key Informant Interviews (KII) and Focus Group Discussions (FGD) for a total of 280 mothers; primiparous (n=140) and multiparous (n=140) with infants 0-5 months of age. The KII were conducted with the healthcare providers at Wajir District Hospital while FGDs were conducted with mothers exclusively breastfeeding and those not exclusively their babies. Data were entered and analyzed using SPSS. Descriptive statistics was used to describe the study population demographic characteristics, knowledge, attitudes and practices of both primiparous and multiparous mothers. T-test was used to test for significant differences between primiparous and multiparous for continuous data. Chi-square test and odds ratio were used to test the association between EBF and categorical variables. Statistical significance was set at p< 0.05. Qualitative data was transcribed, and common themes identified. Results showed high maternal knowledge on breastfeeding in both group mothers. The attitudes towards EBF were also positive. Nonetheless, high maternal knowledge and positive attitude did not necessarily translate into the practice of EBF. This was attributed to socio-cultural factors deeply rooted in the community that influenced infant and young child feeding practices. Overall, the prevalence of EBF was 45.5% (primiparous women 39.4% and multiparous women 49.3%) with no significant differences between the mothers. The low EBF rate may be attributed to the over 50% of mothers getting breastfeeding information from traditional birth attendants (TBAs) and family/friends/relatives compared to 38% receiving the same information from health facility. Additionally, cultural practices that propagate the early introduction of prelacteals were hindrances to EBF practices. The study established no significant relationship between maternal knowledge and EBF practice. In contrast, maternal attitude score was significantly associated with the practice of EBF. Those mothers with a positive attitude towards EBF were more likely to EBF (chi-square test; p=.001). There was no significant relationship in maternal sources of information and parity (chi-square test; p>0.05). The study showed that infants’ age and morbidity as well as maternal morbidity and breastfeeding complications had significant negative associations with exclusive breastfeeding. There was no association between maternal socio-economic and demographic characteristics with exclusive breastfeeding. It is recommended that Ministry of Health (MOH) design effective community based programmes to improve breastfeeding practices by establishing or strengthening community-based structures (mother to mother breastfeeding support groups, community health workers, volunteers and Traditional Birth Attendants) and linking them to the health facilities for training, support and monitoring. The study also recommends MOH to maximize on the opportunities of integrating EBF campaigns with other community based interventions like community based management of severe acute malnutrition; malnutrition screening, social protection and food security programmes.
CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Breastfeeding is the universally accepted mode of infant feeding. Appropriate Infant and Young Child Nutrition (breastfeeding and complementary feeding) have the single largest impact on child mortality (19%) of all preventive interventions (Lancet child Survival Series, 2003). The protection, promotion and support of breastfeeding are now major public health priorities, as emphasized in the Global Strategy for Infant and Young Child Feeding. The WHO and UNICEF recommendations on breastfeeding are as follows: initiation of breastfeeding within the first hour after birth; Exclusive Breastfeeding (EBF) for the first six months; and continued breastfeeding for two years or more, together with safe, nutritionally adequate, age appropriate, responsive complementary feeding starting from the sixth month (www.unicef.org; accessed 20th September 2013). Universal (90%) coverage of exclusive breastfeeding is estimated to prevent around 13% of all deaths among children under five years of age in low and middle income countries (Joshi et al., 2014).

In The Lancet’s 2008 Series on Maternal and Child under nutrition, failure to exclusively breastfeed for 6 months is associated with increased risk of childhood mortality and morbidity (Black et al., 20013). In the same series, breastfed infants were shown to have at least six times greater chance of survival in the early months than non-breastfed children and 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 (http://www.unicef.org/nutrition/index_24824.html; accessed 26th November 2015).
The number of under-fives deaths attributed to sub-optimum breastfeeding in 2011 was 804,000 (11.6%) of all deaths (Victoria et al., 2008; Black et al., 2013). Inappropriate Infant and Young Child Feeding (IYCF) practices, such as early cessation of breastfeeding, non-exclusive breastfeeding and untimely introduction of complementary foods significantly contribute to child malnutrition and death, mostly in poorer countries (Black et al., 2008; Edmond et al., 2006). Studies have shown that EBF could prevent 13% of deaths in children less than 5 years of age globally, and optimal complementary feeding could lead to a further 6% decrease in under-five mortality (Jones et al., 2003).

Globally, sub-optimal breastfeeding still accounts for an estimated 1.4 million deaths in children under five years annually. On average, only around 35% of infants <6 months are exclusively breastfed globally (WHO, 2010). Only 38% of children less than six months of age in the developing world are exclusively breastfed and just 39% of those 20-23 months old benefit from the practice of continued breastfeeding (UNICEF, 2013). Despite having improvements in the global breastfeeding rates in the last decade, only 39 per cent of children <6 months of age in the developing world are exclusively breastfed (http://www.unicef.org/nutrition/index_24824.html; accessed 26th November 2015).

In the year 2010, the prevalence of EBF among infants less than 6 months in developing countries was at 39%, 45% in South Asia, 28% in West and Central Africa and 47% in Eastern and Southern Africa (Cai et al., 2012). In East Africa, the EBF rates are quite impressive with Rwanda (84.90%), Burundi (69.3%), Uganda (63.2%), Kenya (61%) and Tanzania (50%).
Despite the recent increase in EBF to 61% (Kenya National Bureau of Statistics [KNBS] and ICF macro, 2014) from 32% (Kenya National Bureau of Statistics [KNBS] and ICF macro, 2010), Kenya has the second lowest rate among East African countries. Majority of the studies on IYCF practices have targeted adult women, despite the fact that globally, between 14 and 15 million adolescent girls aged 15–19 years old give birth each year accounting for 10% of births worldwide, and 90% of them occur in low income countries (WHO 2006; Hackett et al., 2012). In Tanzania, mothers’ adequate knowledge of EBF influenced the prevalence of EBF; the higher the level of adequate knowledge of EBF among women, the higher the prevalence of EBF (Nkala & Msuya, 2011). Primiparous mothers are likely to have more challenges in practicing EBF, being their first experience with difficulties in adjusting to the new role and the breastfeeding techniques (Yati et al., 2002).

### 1.2 Statement of the Problem

Under-nutrition is a major contributor to childhood mortality and morbidity, posing a challenge in the achievement of the Sustainable Development Goals (SDGs 3) of reducing child mortality (UNICEF, 2013). Malnutrition is primarily responsible, directly or indirectly for about one-third of deaths among the under-fives and approximately two-thirds of these deaths are often associated with inappropriate IYCF practices and occur during the very first year of life (www.who.int/nutrition; accessed 20th November 2013). The risk of a child dying in a low-income country before completing five years of age is about 18 times higher than that of an under-five child from a high-income country. Within these countries, under-five mortality is higher among children living in rural areas, less educated communities and
poorest households (WHO, 2012). Most of these deaths can be prevented by known, simple, affordable and low cost interventions such as early initiation of breastfeeding and EBF of infants among other interventions (WHO, 2012).

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, 2008; (http://www.unicef.org/nutrition/index_24824.html; accessed 26th November 2015). It is estimated that reaching over 90 per cent of infants with interventions that primarily aim to protect, promote and support optimal IYCF practices can contribute to reducing overall child mortality by nearly a fifth (Lancet 2008; UNICEF, 2012).

Despite having over 61% of children less than six months in Kenya exclusively breastfed, over 15% of children less than 6 months are prematurely fed complementary foods, 10 percent consume plain water, 10 percent consume other milks, and 3 percent consume non-milk liquids (Kenya National Bureau of Statistics [KNBS] and Inner City Fund [ICF] macro, 2010).

Approximately 1.8 million children in Kenya are classified as chronically malnourished. Successive Kenya Demographic Health Survey have revealed very low levels of EBF coupled with poor complementary feeding practices, as major contributors to widespread chronic and acute malnutrition in under-fives (Kenya National Bureau of Statistics [KNBS] and ICF macro, 2010). This poses a challenge to meeting Kenya’s vision 2030 and set targets for SDG’s.
Primiparous mothers are likely to have more challenges in practicing EBF - being their first experience. They may have difficulties in adjusting to the new role and the breastfeeding feeding techniques (Afiyant et al., 2002). Mothers tend to receive varied information on IYCF from different sources including parents, relatives, media, friends and healthcare providers (Tully & Ball, 2013). Most of the information received may not be scientifically sound and may negatively influence the practice of EBF among the primiparous mothers because of lack of experience.

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 stunted, 14% wasted and 21% underweight (Kenya National Bureau of Statistics [KNBS] and ICF macro, 2014). In 2013, the EBF rate in Wajir was 53.7% (Muruka & Ekisa, 2013). Subsequent annual studies done by the Ministry of Health, UNICEF and Save the Children have reported low prevalence of EBF and high burden of acute and chronic malnutrition in the County. The realization of EBF practices targeting the WHO projected rate of over 90% will be the most prudent, practical, feasible and sustainable intervention that will avert the chronic malnutrition episodes in Wajir.

There is limited literature in the study area and especially comparing KAP between primiparous and multiparous mothers.

1.3 Purpose of the Study

To compare the knowledge, attitude and practices of EBF between primiparous and multiparous mothers in Wajir East district hospital, Wajir County.
1.4 Objectives of the Study

1. To determine and compare maternal knowledge, attitude and practices on EBF between primiparous and multiparous mothers in Wajir District Hospital, Wajir County.

2. To compare the prevalence of EBF between primiparous and multiparous mothers in Wajir District Hospital, Wajir County.

3. To compare the source(s) of information on EBF between primiparous and multiparous mothers in Wajir District Hospital, Wajir County.

4. To establish the influence of knowledge and attitude on the practice of EBF among primiparous and multiparous mothers in Wajir District Hospital, Wajir County.

5. To determine the demographic socio-economic and cultural factors that influence maternal practice of EBF in Wajir District Hospital, Wajir County.

1.5 Study Hypotheses

H₀₁: There is no significant difference in knowledge between primiparous and multiparous women in Wajir District Hospital, Wajir County.

H₀₂: There is no significant difference in attitudes between multiparous and primiparous women in Wajir District Hospital, Wajir County.

H₀₃: There is no significant difference in the practice of EBF between primiparous and multiparous women in Wajir District Hospital, Wajir County.

H₀₄: There is no significant difference in knowledge and attitude on the practice of EBF among primiparous and multiparous mothers in Wajir District Hospital, Wajir County.
1.6 Significance of the Study

The study findings are be significant to stakeholders such as the government, non-government organizations, private institutions and the community in improving the practice of EBF in the community. The study provided important information that may guide breastfeeding interventions in Maternal Child Health (MCH) clinics in Kenya. The study contributed knowledge in the ongoing research efforts on the promotion of exclusive breastfeeding.

1.7 Delimitation of the Study

The study was limited to Wajir County, a region predominantly inhabited by the Somali community; therefore, the results can only be generalized to areas and populations with similar cultural, social and economic characteristics.

1.8 Limitations of the Study

Infant feeding practices were determined on maternal/caregivers’ self-reports based on 24-hour recall and not by observation. Whereas this method may be prone to recall bias, it is acceptable for community level assessment of IYCF practices (WHO, 2007) as was the case in this study.

1.9 Conceptual Framework

This study adopted the conceptual framework on determinants of breastfeeding behavior by Lutter (2000). The framework was customized for this study (Figure 1).
Figure 1.1: Conceptual Framework on Determinants of Infant Feeding Practices
Source: Lutter, 2000

Optimal breastfeeding requires maternal choice combined with the ability to implement that choice (Figure 1.1), which is in turn affected by social, physical, and socio-cultural factors that are immediate to the mother’s experience. The maternal choices and practices are primarily influenced by maternal knowledge on IYCF. Cultural attitudes, medical, economic conditions and national policies may influence the degree to which a mother experiences support or barriers to optimal breastfeeding. Social support and acceptance is required for overcoming
socioeconomic, cultural, obstacles to optimal breastfeeding (WHO, 2003). Among the factors that influence the abandonment of breastfeeding by mothers’ age groups, social factors tend to be more frequent in the younger than older mothers (71.4%) (Durán et al., 1999).
CHAPTER TWO: LITERATURE REVIEW

2.1 Overview of Exclusive Breastfeeding

According to the Global Strategy for IYCF, appropriate IYCF is the cornerstone of care for childhood development. Exclusive breastfeeding (EBF) for six months and continued breastfeeding with safe, appropriate and adequate feeding is recommended as a global health policy in both developing and developed countries (Kramer et al., 2001). The lives of 95 babies could be saved every hour - 830,000 a year - if new mothers around the world initiate breastfeeding one hour after giving birth. Despite the startling statistics, global breastfeeding rates are stalling and actually declining across East Asia and in some of Africa’s most populous countries like Ethiopia, and Nigeria (Save the Children, 2013).

2.2 Benefits of Exclusive Breastfeeding

EBF means that the infant has receives only breast milk from his/her mother or a wet nurse, or expressed breast milk, and no other liquids or solids, with the exception of drops or syrups consisting of vitamins, mineral supplements or medicines (WHO, 2008). WHO recommends EBF for the first six months of life, and thereafter continued breastfeeding for two years or longer along with complementary food. EBF has been demonstrated to have immense health benefits to the child; human milk boosts the immunity of the infant since it is shown to enhance the immature immunologic system of the neonate and strengthens host defense mechanisms against infective and other foreign agents (Oddy, 2002). A reduction of 40% in the incidence of Type 2 diabetes mellitus is reported, possibly reflecting the long-term positive effect of breastfeeding on weight control and feeding self-regulation (Das, 2007). Infants who exclusively breastfed for 4 to 6
11

months have a four-fold increase in the risk of pneumonia compared with infants who exclusively breastfed for more than 6 months (Chantry et al., 2006). In the developing countries in which 90% of the world’s childhood deaths occur, EBF for 6 months and appropriate complementary feeding is the most effective intervention, with the potential of preventing more than 1 million infant deaths per year, equal to preventing 13% of the world’s childhood mortality (Jones et al., 2003). Breastfeeding provides protection to infants against common acute childhood infections, enhance the immune system, decrease rates of Sudden Infant Death Syndrome (SIDS), enhance cognitive development and prevent chronic diseases such as obesity, diabetes mellitus (type 1 and 2), asthma and certain pediatric malignancies (James et al., 2009).

2.3 Prevalence of Exclusive Breastfeeding (EBF)

Globally an average of around 38% of infants 0 to 6 months old are exclusively breastfed; 48% from the least developed countries are exclusively breastfed, 36% sub-Saharan Africa and 52% Eastern and Southern Africa (UNICEF, 2014). Table 2.1 shows the EBF rates in some of the African countries.
Table 2.1: EBF Rates Among Some of the African Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>year</th>
<th>EBF rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burkina Faso</td>
<td>2010</td>
<td>24.8%</td>
</tr>
<tr>
<td>Benin</td>
<td>2012</td>
<td>33%</td>
</tr>
<tr>
<td>Cameroon</td>
<td>2011</td>
<td>20%</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>2011</td>
<td>52%</td>
</tr>
<tr>
<td>Ghana</td>
<td>2011</td>
<td>63%</td>
</tr>
<tr>
<td>Zambia</td>
<td>2007</td>
<td>61%</td>
</tr>
<tr>
<td>Malawi</td>
<td>2010</td>
<td>71%</td>
</tr>
<tr>
<td>Mali</td>
<td>2007</td>
<td>34%</td>
</tr>
<tr>
<td>Nigeria</td>
<td>2011</td>
<td>15.1%</td>
</tr>
<tr>
<td>Senegal</td>
<td>2011</td>
<td>38%</td>
</tr>
<tr>
<td>Tunisia</td>
<td>2011</td>
<td>9%</td>
</tr>
<tr>
<td>Gabon</td>
<td>2012</td>
<td>6%</td>
</tr>
<tr>
<td>Djibouti</td>
<td>2004</td>
<td>1%</td>
</tr>
<tr>
<td>South Africa</td>
<td>2004</td>
<td>8%</td>
</tr>
<tr>
<td>Sudan</td>
<td>2010</td>
<td>34%</td>
</tr>
<tr>
<td>Uganda</td>
<td>2011</td>
<td>63.2%</td>
</tr>
<tr>
<td>Tanzania</td>
<td>2010</td>
<td>50%</td>
</tr>
<tr>
<td>Kenya</td>
<td>2014</td>
<td>61%</td>
</tr>
<tr>
<td>Burundi</td>
<td>2010</td>
<td>69.3%</td>
</tr>
<tr>
<td>Rwanda</td>
<td>2011</td>
<td>84.9%</td>
</tr>
</tbody>
</table>

Source: WHO Global Health Observatory Data Repository 2015

In Africa, whereas Rwanda (84.9%), Burundi (69.3%), Uganda (63.2%), Ghana (63%) and Malawi (71%) record the highest EBF rates, Djibouti (1%), South Africa (8%) and Gabon (6%) recorded the lowest EBF rates from respective Health and Demographic surveys (http://apps.who.int/gho/data/node.main.1100?lang=en; accessed 11th May 2015).

In East Africa, the EBF rates are quite impressive with Rwanda (84.90%), Burundi (69.3%), Uganda (63.2%), Kenya (61%) and Tanzania (50%) all having more than half of the infants 0-5 months exclusively breastfed (http://apps.who.int/gho/data/node.main.1100?lang=en; accessed 11th May 2015). Despite the recent increase in EBF to 61% (Kenya National Bureau of Statistics
[KNBS] and ICF macro, 2014) from 32% (Kenya National Bureau of Statistics [KNBS] and ICF macro, 2010), Kenya has the second lowest rate among East African countries.

Low rates of EBF have been reported in many parts of Kenya. In Molo sub-County in Nakuru County, Kenya, the EBF prevalence was 38%, a rate below the WHO 90% recommended rate (Mututho, 2012). Similarly, the EBF rate among mothers in Kibera slum was very low 5.6% (Ochola, 2008). The rates were likewise low in Nyando, Kenya, where the EBF rates was 33% (Nyanga et al., 2012).

2.4 Maternal Knowledge on Exclusive Breastfeeding (EBF)

Knowledge is a perquisite for practice and maternal choices and practices are primarily influenced by maternal knowledge on IYCF (Lutter, 2000). In Bangladesh, while mothers agreed that breast milk was good for the babies, they had limited knowledge on the health benefits of breast milk. Eighty six per cent (86%) of the mothers knew about EBF but many assumed it meant breast milk and other liquids (usually water or cow’s milk) during the first 6 months. The knowledge gaps identified among young mothers in Bangladesh were: misinterpretations of the meaning of EBF, confusion regarding appropriate timing of initiation and duration of breastfeeding and negative expectations regarding breast milk production (Hackett et al., 2012). In Ethiopia, 87.3% of mothers had knowledge about EBF and 12.7% mothers had no knowledge about EBF and started complementary feeding before 4 months of age because they thought breast milk alone is not sufficient for the baby (Wolde et al., 2014). In Nigeria, it was found that maternal knowledge and awareness does not translate to practice of exclusive breastfeeding (Onah et al.,
2014). There is paucity in information that compares knowledge on EBF between primiparous and multiparous mothers.

In Kibera slums, Nairobi, breastfeeding knowledge among breastfeeding mothers was found to be inadequate. About two-thirds (65.3%) of the mothers knew babies should be breastfed for a period of 2 years or more; 88.3% knew that babies should be breastfed on demand. In contrast, only 22.2% of the mothers stated babies should be exclusively breastfed for 6 months, whereas about a third (32.2%) stated that EBF should be done for a period of 1 to 3 months (Ochola, 2008). It was established that high knowledge on exclusive breastfeeding does not necessarily influence EBF (Ochola, 2008). A number of studies across Kenya have demonstrated high knowledge on breastfeeding among breastfeeding mothers (Ogada, 2014). Knowledge, practice and coverage (KPC) survey in Wajir East and Wajir South demonstrated high knowledge on EBF among breastfeeding mothers (Save the Children, 2013).

2.5 Maternal Attitudes Towards Exclusive Breastfeeding (EBF)

In the United Kingdom, a positive attitude towards breastfeeding was associated with a longer duration of breastfeeding. Similarly, positive attitudes was associated with high level of support, confidence and a natural determination to breastfeed (Brown et al., 2011).

Majority of adolescents living in many sub-Saharan African settings are likely to have internalized norms and models of child feeding behaviors quite early before they have had a child and this negatively impacts on their attitude towards EBF henceforth. These norms are widely agreed upon by members of the community as
the ‘right’ way to do things and forms a basis that mothers refer to when making child care decisions. What gives these cultural models directive force is that they are widely agreed upon by other members of the community as the ‘right’ way to do things (Hadley et al., 2008). In Ethiopia, adolescents’ attitudes towards early child feeding behaviors deviated substantially from the current international recommendation that infants be exclusively breastfed for the first six months.

Mothers living in the urban areas and in small towns were more likely than those in rural areas (22%) to report planned breastfeeding durations of less than one year (p<0.0001). Respondents in their late teens were more likely to report their planned duration of breastfeeding as less than one year (p<0.001) (Hadley et al., 2008). In southwestern Ethiopia, the community’s attitude towards breast feeding, majority of mothers (87.3%) had good attitude and strongly agree that the EBF is advantageous for infants aged less than 6 months. On the other hand 12.7% disagreed and had negative attitude towards EBF. Over 30% indicated that colostrum should be discarded (Wolde et al., 2014). In an examination of mothers’ previous breastfeeding practices and EBF in the United States, mothers’ experience influenced their attitudes and practices by having them repeat the EBF of their previous child (Phillips et al., 2011).

In Kenya, a number of studies have demonstrated positive maternal attitude towards exclusive breastfeeding (Ochola, 2008; Ogada, 2014; M’Liria, 2015; Kipruto 2013). Major gaps exist among adolescent girls and young mothers in Knowledge, Attitude and Practices (KAP) on EBF particularly in Sub-Saharan Africa (Hackett et al., 2012). The factors influencing successful breast feeding in first-time mothers at 3 months postpartum were observed as the mother’s own resources and attitude to
breast feeding (Tarkka et al., 1999). There is lack of information that could
demystify the differences in attitudes towards EBF among breastfeeding mothers in
relation to their parity and age. Similarly, just like on knowledge, there is scarcity of
information comparing knowledge on EBF between primiparous and multiparous
mothers.

2.6 Factors Associated with Exclusive Breastfeeding Practices

2.6.1 Demographic, Socio-Cultural and Socioeconomic Factors and the Practice of Exclusive Breastfeeding

In Brazil, it was found that adolescent mothers had a 1.5 times greater risk of
abandoning EBF before their babies were 6 months of age compared with adult
women (Dias de Oliveira et al., 2014; Santo et al., 2007). Early abandonment of
EBF among young mothers has been attributed to a number of factors i.e. Low
socioeconomic status, sore nipple/mastitis, presence of a partner and negative
familial influence (Dias de Oliveira et al., 2014; Dubois et al., 2003; Santo et al.,
2007).

Demographic, economic conditions and commercial pressure are shown to influence
the choice of the mothers’ IYCF practices (Lutter, 2000). A study carried in a rural
area in Egypt on the prevalence and predictors of 6-month exclusive breastfeeding
highlighted a number of relationships between different socio-demographic
characteristics and exclusive breastfeeding (Al Ghwass et al., 2011);

i. The infant’s sex was significantly associated with EBF practice; male
children were 1.8 times more likely to exclusively breastfed than girls.
ii. No associations were found between EBF and maternal age, education of the mother and father, maternal working status, place and mode of delivery, parity, social class, last inter-delivery interval, and birth weight.

iii. A highly significant association between EBF and antenatal care; mothers who made four or more antenatal care visits were 1.9 time more likely to practice EBF than those who made less visits. A highly significant association between the practice of EBF and early initiation of breastfeeding after delivery.

iv. The predictors for EBF were maternal younger age, a higher number of antenatal care visits (four or more visits), early breast-feeding initiation, male infant, and absence of breastfeeding difficulties were the significant predictors associated with higher chance for exclusive breastfeeding with odds ratios of 2.9, 2.8, 2.2, 2.1, and 1.8 respectively.

The age of the infant and employment status of the mother was among predictors of EBF practice in Ethiopia. Employed mothers were less likely to practice EBF. The younger the infant the higher the likelihood of being fed; age of the infant was a predictor of EBF - as the age of the children approached 6 months, the rate of EBF decreased significantly. Infants in the age group < 2 months were about 6 times more likely to be exclusively breastfed compared to infants in the age group 4-5 months. Infants in the age group 2–3 months were 2 times more likely to breastfeed exclusively when compared to those infants in the age group 4–5 months (Setegn et. al, 2012).

In a study conducted in Kenya to establish young mothers, first time parenthood and exclusive breastfeeding in Kenya, it was found that the duration of exclusive
breastfeeding increases with age of the mother; younger mothers (below 20 years) have shorter durations of exclusive breastfeeding when compared to older cohorts and that higher durations of exclusive breastfeeding are associated with first time parenthood (Naanyu, 2008).

In Kenya, it has been shown that household size was the only demographic characteristic having an association with maternal EBF practices at 1 month. Information on the variables, maternal age, education, marital status, occupation, income sources, household size and monthly house rent had insignificant associations with EBF (Ochola, 2008). Cultural perceptions not in tandem with WHO recommendation on IYCF and pressure from family members and friends to introduce complementary feeding early are among the factors that were identified as impediments to EBF in Kibera slum Kenya (Ochola, 2008). However, there is no consistency in the way these factors influence EBF practices in different communities and contexts. Specifically, there is scarcity of information on how maternal age and parity influence the practice of EBF and therefore the need to investigate the influence of these factors on EBF practice. In Molo, Kenya, the role of culture in the practice of EBF was demonstrated. Traditional birth attendants who performed fairly a significant number of the deliveries in the rural areas believed that a mother should not breastfeed for six months without other feeds and that it is a taboo to express human milk (Mututho, 2013).

2.6.2 Maternal Knowledge and the Practice of Exclusive Breastfeeding

In rural Ethiopia, the total number of births (maternal parity) was significantly associated with the maternal knowledge of optimal breastfeeding practices. Mothers who had two or less children had inadequate knowledge about optimal child feeding
practices (Adjusted ODDS RATIO [AOR]= 0.47 [0.29, 0.76; p<0.05]) compared to those with more than two children (Tamiru & Mohammed, 2013).

A study investigating the barriers to EBF among infants aged 0-6 months in Eldoret municipality, Kenya, revealed inadequate breastfeeding knowledge among the mothers as one of the major barriers to EBF (Cherop et al., 2009). Major gaps in adolescent girls and young mother’s knowledge of IYCF recommendations, particularly on EBF have been established (Hackett et al., 2012; Hadley et al., 2008). While there is limited data specific to primiparous mothers KAP on EBF in Kenya, thorough search of available literature did not reveal substantial evidence to suggest mothers’ knowledge as a predictor to EBF practices in the study area.

2.6.3 Maternal Attitudes Towards the Practice Of Exclusive Breastfeeding

In Bangladesh, where approximately 60% of rural girls become mothers before the age of 18; mothers’ breastfeeding attitudes and knowledge prior to pregnancy are predictive of actual IYCF practices post-partum. Attitudes and knowledge of adolescent girls are influenced by the perceptions and practices of older women in their communities and that perceptions and practices may be based on cultural models in place by adolescence with Perceived Insufficient Milk (PIM) commonly reported as a barrier to breastfeeding and this is anticipated way before child bearing. At the same time, misinterpretation of IYCF guidelines among adolescent girls and young women also points to difficulties in translating knowledge into practice (Hackett et al, 2012).

In Jamaica, no difference was observed between exclusive and non-exclusive breastfeeding mothers in terms of attitudes and knowledge toward breastfeeding
(Chatman et al, 2004). In Ethiopia, a significant number of mothers had a negative attitude towards EBF and this adversely affected timely initiation and exclusive breastfeeding rates. Majority of the mothers - 59.3% and 60.5%, explained breastfeeding as time consuming affecting the posture or health of the mother (Mussie et al, 2014). There are limited studies that examine the maternal attitudes as a factor that positively or negatively influence EBF and precisely on primiparous mothers.

2.6.4 Socio-Cultural and Socioeconomic Factors and the Practice of Exclusive Breastfeeding

In Kenya, a number of factors are shown to influence EBF practices among mothers. Employed women are less likely to practice EBF; More EBF was observed among those who had hospital delivery with a difference of 21% points (p=0.03) and both chronic illness and place of delivery appeared to influence EBF. Exclusive breastfeeding rate reduced with an increase in infants’ age with 50% at zero months and 30% at six and the marital status of the mother was significantly (p=0.02) associated with EBF (Ochola, 2008).

In Ghana; planned EBF at birth, positive attitudes towards EBF, delivery place, house ownership and education level are among the factors shown to influence EBF practice (Aidam et al, 2005), while in Ethiopia, age of infant and employment status of the mother were predictors of EBF practice (Setegn et al, 2012). In the peninsular Malaysia, EBF was positively associated with rural residence, Malay mothers, non-working and non-smoking mothers, multiparous mothers, term infants, mothers with husbands who support breastfeeding and mothers who practice bed-sharing (Tan,
2111). Cultural attitudes and norms are recognized as important factors in the WHO’s model of the determinants of infant and child feeding behavior (WHO Global Strategy for Infant and Young Child Feeding, 2003). There is a need to identify factors influencing EBF in different set-ups in order to develop context specific interventions to promote EBF (Ochola, 2008). In Kenya it was found that awareness in EBF had a positive influence in practice with mothers who were aware and practiced EBF were 23 percentage points more than those who were not aware but did the EBF and this difference was statistically (Chi square test; \( p = 0.03 \)) significant (Nyanga et al., 2012).

2.7 Sources of Information on Breastfeeding

First-time mothers in five European countries reported that books, partners and health professionals most influenced their infant feeding decisions. Women may receive information about IYCF during pregnancy from many sources including formal services (health-care providers, antenatal classes), informally (family members and friends), through consulting books and other written materials, and engaging with audio-visual media, such as television and DVDs (Tully & Ball, 2013). Younger mothers are shown to be strongly influenced by their partners, mothers and peers and that they rely upon them for breastfeeding information and support and therefore the need for customized clear, concise and consistent breastfeeding information for the young mothers to have them achieve optimum IYCF (Noble-Carr & Bell, 2012).

Mothers are also influenced by the information they receive from healthcare providers during their antenatal visits to healthcare facilities (Ochola, 2008). In Kibera slums Nairobi Kenya, mothers who had information about optimal
breastfeeding were also more exclusive breastfeeding AOR= 3.16 (1.12, 8.91; p<0.05) compared to those who had no information. Similarly in rural Ethiopia, mothers who had knowledge of optimal breastfeeding were 46% more likely to introduce complementary food AOR=1.46 (1.23, 2.90) compared to those limited knowledge (Tamiru & Mohammed, 2013). Having a radio had a significant contribution in the promotion of maternal knowledge of optimal breastfeeding practices. Mothers (families) who had no radio where less knowledge about optimal breastfeeding practices (Tamiru & Mohammed, 2013). Primiparous mothers are more likely to consider health promotion messages or be exposed to them in different ways (Sloan et al., 2006).

2.8 Summary of Literature Review

A number of factors have been cited to influence breastfeeding in different parts of the world. These are: maternal breastfeeding attitudes and the intention to breastfeed, postpartum depression/psychosis/stress, maternal employment and younger and less educated women have been shown to be less likely to breastfeed especially in Europe (Amin et al., 2011; Hamade et al., 2013; Thulier et al., 2011; Yngve et al., 2011). Major gaps exist among adolescent girls and young mothers in knowledge, attitude and practices on EBF particularly in Sub-Saharan Africa. Conversely, there is paucity of information that comparatively analyses the disparity in KAP among the primiparous and multiparous mothers (Hackett et al., 2012). Primiparous mothers are likely to have more challenges in practicing EBF, being their first experience. They may have difficulties in adjusting to the new role and the breastfeeding techniques (Afiyanti et al., 2002). They are also more likely to get confusing, unscientific and contradictory information from various sources
including parents, relatives, media, friends and healthcare providers (Tully & Ball, 2013). This study therefore investigated the differences in KAP on EBF between first time and multiparous mothers in Wajir East, Wajir County, Kenya.
CHAPTER THREE: METHODOLOGY

3.1 Research Design

A cross-sectional analytical comparative design (Katzenellenbogen et al., 2002) was adopted for this study in an effort to establish the differences in knowledge, attitude and practices of EBF amongst first time and multiparous mothers. The design allowed for one-time data collection on Knowledge, attitudes and practice mothers on EBF as well as the factors likely to be associated with the EBF practice. Quantitative and qualitative techniques were applied in data collection, analysis and presentation.

3.2 Measurement of Study Variables

3.2.1 Dependent Variables

The dependent variable for this study was the practice of exclusive breastfeeding among primiparous and multiparous mothers determined by 24-hour recall using a standardized and validated WHO questionnaire on IYCF was used (WHO, 2008).

3.2.2 Independent Variables

Independent variables for the study were: socio-economic characteristics, cultural factors, maternal knowledge and attitudes towards EBF. Information on maternal and husband’s occupation, maternal income sources, house type, ownership of items/animals and materials mused for the construction of houses were used as proxy indicators of socioeconomic status of the mothers. Data on the community’s cultural perspectives on young child feeding practices were collected using FGDs and KII's.
Ten questions to test maternal knowledge were asked in the study questionnaire. Knowledge score was calculated on the different aspects of breastfeeding that were covered in the questionnaire. The mothers who got the correct response scored 1 for each of the responses while those who did not answer correctly scored 0. The total score was out of 10.

A total of 10 questions were used to test maternal attitudes towards EBF. The Likert scale was used to rate the maternal attitudes towards breastfeeding issues. For each of the questions the maximum score was 4 making a total of 40 marks for the attitude questions. From the composite value, the higher the score the more the positive maternal attitudes towards EBF.

3.3 Study Location
The study was carried out in Wajir East sub-County, Wajir County, Kenya. According to the County Central Bureau of Statistics, the approximate population of Wajir East is 112,572. Over 70% of the inhabitants depend solely on livestock for their livelihood.

3.4 Target Population
The target population were primiparous and multiparous mothers with infants 0-5 months of age attending MCH clinic, Wajir District hospital, Wajir County during the period of the study.

3.4.1 Inclusion Criteria
First time and multiparous mothers and their infants 0-5 months visiting Wajir District maternal and child health clinic Wajir East, Wajir County during the study
period. In addition, the mothers had to give informed consent to participate in the study.

3.4.2 Exclusion Criteria

Exclusion criteria included: Mothers with medical conditions or those on medications in which breastfeeding is contraindicated. Infants diagnosed with serious congenital malformations in which breastfeeding was deemed not feasible or contra-indicated. These conditions were verified from maternal and child health cards by the clinicians at the hospital.

3.5 Sampling Techniques

A systematic random sampling procedure was used for the study. The average number of mothers with infants 0-5 months of age that visit the MCH clinic daily at Wajir district hospital were sought from the health staff at the MCH. The sampling interval was established by dividing the average number of mothers/caregivers that visit the clinic per day with the ideal number of mothers that could be interviewed per day. The research team was informed that on average 30 mothers visit the MCH clinic per day. A sampling interval was calculated by diving the number of mothers/caregivers who visit the MCH per day (30) by the number of interviews that could be conducted per day (12) to get a sampling interval of 2. On a daily basis, the first mother/caregiver to be interviewed was selected by simple random sampling technique using a table of random numbers to select a number between 1 and the sampling interval of 2 (two). The next respondent was selected by adding the sampling interval to the number selected. This procedure was used to select the rest of the mothers/caregivers to be interviewed during the day. The same procedure was
conducted on the subsequent days until the required sample size was attained over a 5-week period (Figure 3.1).

**Sampling Procedure**

- **On average, 30 mothers with infants aged 0-5 month’s old visit the MCH clinic daily**
- **1st mother was randomly selected**
- **2nd and subsequent mothers systematically selected**
- **12 mothers sampled daily**
- **5 days a week from Monday to Friday**
- **Data collected for 5 weeks**
- **60 mothers and their infants aged 0-5 months old sampled weekly**
- **A total of 280 mothers (140 primiparous and 140 multiparous) and their infants aged 0-5 months sampled**
- **Thursday of the 5th week, 34 mothers their children sampled and interviewed**

**Figure 3.1: Flow chart on the sampling procedure**
3.6 Sample Size Determination

The sample size was 280 mothers (140 mothers from each group)

Formula by Cochran (Israel 1992);

\[ \text{no} = \frac{Z^2 pq}{e^2} \]

\( \text{no} \) = the desired sample size

Z = the standard normal deviate at 95% confidence level (1.96)

\( P = \) the estimated proportion of the target population estimated to be EBF

\( q = 1-p; \quad e = \) desired level of precision (0.05)

\[ \text{no} = (1.96)^2 (0.32) (0.68) = 334 \]

\[ (0.05)^2 \]

Finite population correction done to produce a sample size proportional to the population

\[ n = \frac{\text{no}}{1 + (\text{no} - 1) \frac{1}{N}} \]

\( n \) = the sample size; \( \text{no} \) = desired sample size

\( N \) = the estimate of the population size

\[ n = \frac{334}{1 + (334 - 1) \frac{1}{200}} = 125 \text{ per group of mothers} \]

A non-response rate of 10% was added to make a sample of 140 from each group totaling to 280 mothers
3.7 Research Instruments

3.7.1 Questionnaire

A researcher-administered structured questionnaire with both closed and open ended questions was used to collect data on maternal demographic and socio-economic characteristics, that is: maternal knowledge, attitude and practices on breastfeeding, sources of breastfeeding information, infant feeding practices, infant morbidity, maternal morbidity and breastfeeding challenges. The questions were adopted from a face-content validated questionnaire used in Kenya (Ochola, 2008) and customized for this study.

3.7.2 Key Informant Interviews (KII’s) Guide

Key informants including nurses, clinicians and nutritionists working at Wajir District Hospital MCH were interviewed using a key informant interview guide composed of structured questions on KAP and challenges facing mothers on EBF.

3.7.3 Focus Group Discussion (FGD) Guide

Three FGD guides were conducted. Two FGD guides for mothers who exclusively breastfed (one each for multiparous and primiparous mothers) and the third for mothers who did not breastfed regardless of the study group. These were conducted at the Wajir District Hospital. The FGD guides contained structured questions on maternal knowledge, attitude and practices of EBF.

3.7.4 Pre-testing of Research Instruments

Pre-testing of the research instruments for clarity, validity and reliability was done at Wajir district hospital using a sample size of 28 participants (10% of the study sample size) after which necessary adjustments and modifications were made before the actual study. The 28 participants did not participate in the actual study.
3.7.4.1 Reliability

The questionnaire was administered to 6 mothers who met the inclusion criteria but were not part of the study sample. The questionnaire was re-administered to the same mothers after a week to determine the consistency of the responses. From the data collected the calculated reliability coefficient was 0.85.

3.7.4.2 Validity

To ascertain the degree to which the data collection instruments measured what they supposed to measure, the instruments were validated by nutrition experts from the Department of Food, Nutrition and Dietetics who reviewed the questionnaire and gave feedback on the face validity of questions. The questionnaire was adjusted based on their feedback.

3.7.5 Selection and Training of Research Assistants

Three research assistants with a minimum of Kenya Certificate of Secondary Education and/or health/nutrition qualification were recruited from those residing in the study area and who speak Somali and Kiswahili (the National language) fluently. Previous experience in surveys was an added advantage. The research assistants underwent a two-day training to cover the following: explanation of the study objectives, interview techniques, recording responses and research ethics issues as well as reading through the questionnaire and agreeing on a standard way of asking them in Kiswahili/local language. The training also included pre-testing of the data collection tools. The researcher conducted the training through lectures, demonstrations and role plays.
3.7.6 Data Collection Procedures and Techniques

The interviews were conducted at a private and quiet room at the MCH, Wajir District hospital. Every week, Monday to Friday, the researcher and the research assistants visited the MCH at Wajir District hospital. The researcher sought support and cooperation from the nursing officer in-charge and to get the necessary permission and support required. The officer in-charge at the MCH clinic, Wajir District hospital assisted the researcher in identifying eligible mothers who meet the inclusion criteria. The researcher then sampled the mothers and their children to be included in the study. The researcher and research assistants administered the questionnaire and recorded the responses.

3.7.6.1 Interviews with Mothers

Face to face interviews were conducted once with each selected group of mothers and guided by the questionnaires at the MCH, Wajir District Hospital.

3.7.6.2 Focus Group Discussions

A total of three FGDs were conducted with mothers at the Wajir County hospital. One FGD was conducted with the primiparous mothers who practiced EBF and another with the multiparous mothers who practiced EBF to elicit their perceptions on EBF and influenced them to practices EBF. The third FGD was conducted with those mothers who did not practice EBF regardless of the study groups to elicit information on mothers’ KAP on EBF, sources of information on breastfeeding, challenges to EBF. Each FGD comprised of 8-12 members purposively selected and the discussions lasted 60-90 minutes in a venue of their choice. The researcher facilitated all the FGDs and the research assistants recorded the deliberations and the non-verbal cues.
3.7.6.3 Key Informant Interviews

Three KIIs were conducted with the health staff at the Wajir County hospital. One KII was conducted with each of the following health providers: - nurse in-charge of the Maternal and Child health clinic (MCH), District clinical officer and head nutritionist. The KIIs provided information on mothers’ KAP of EBF, factors influencing the practice of EBF and the challenges mothers face in the practice of EBF.

3.7.7 Data Analysis and Presentation

The data was checked, cleaned and coded. The data was entered and analyzed using Statistical Package for Social Sciences (SPSS) version 17.0. Descriptive statistics (frequencies, percentages, means and standard deviation) was used to describe the study population on maternal demographic and socioeconomic characteristics, prevalence of EBF and knowledge on EBF. T-test was used to establish significant differences in primiparous and multiparous mothers of continuous data. Inferential statistics; Chi-square test and odds ratio were used to test the association between EBF and categorical variables and logistic regression to identify the predictors of EBF in the study population. P value of < 0.05 was used as the criterion for statistical significance. EBF was determined using the WHO definition and based on 24 hour recall. Data collected through KII’s and FGD’s was transcribed, arranged in general categories, coded, common themes identified, inferences and conclusions made and used to compliment quantitative data where appropriate. Data has been presented in tables, graphs and pie-charts.

3.7.8 Logistical and Ethical Considerations

Authority to conduct the research was sought from the Graduate School of Kenyatta University. Ethical clearance to conduct the study was sought from the Ethical
Review Committee of Kenyatta University (ref. number KU/R/COMM/51/321) and permission to conduct the research from the National Commission for Science, Technology and Innovation (NACOSTI) - clearance reference number S. No. 3164. The researcher also reported to the Chief Officer for health and the medical superintendent of Wajir County hospital. The benefits of the study were highlighted to the respondents and they were informed that there were no risks involved by participating in the study. Informed written or thumb print consent was sought from the respondents who were selected to take part in the study. Mothers who were less than 18 years of age signed assent forms before participating in the study. Participants were assured of confidentiality. The names of the participants were included in the questionnaires only for reference during the interviews. All the participants were also assured that the information they gave would only be used for purposes of research and that findings would be communicated to them.
CHAPTER FOUR: RESULTS

4.1 Characteristics of the Study Population

4.1.1 Maternal Socio-Demographic Characteristics

Table 4.1 shows that many mothers (45.6%) were between the ages of 18 to 25 years, 31.1% between 26-30 years, 21% were 31 years and above and 2.1% below 18 years of age. The median age was 26 (16-40) and the mean age was 26.21±5.43. Being primigravida, the mothers were significantly younger than the multiparous mothers, with 58.4% of the primiparous below 25 years as compared to 37.5% of the multiparous. Majority (83.3%) of the mothers were married, 5.0% were single, 6.0% separated and 2.1% widowed. Of the 83.3% mothers that were married; 84.7% of the primiparous and 81.9% of the multiparous mothers. A few of the primiparous (2.9%) and multiparous (9%) mothers were separated (Table 4.1).
### Table 4.1: Maternal Socio-Demographic Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Primiparous</th>
<th>Multiparous</th>
<th>Total</th>
<th>Chi-square test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N = 137</strong></td>
<td>N = 144</td>
<td>N=281</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal age:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;18 Years</td>
<td>6 (4.4%)</td>
<td>0 (0%)</td>
<td>6 (2.1%)</td>
<td></td>
</tr>
<tr>
<td>&gt;18-25 years</td>
<td>74 (54%)</td>
<td>54 (37.5%)</td>
<td>128 (45.6%)</td>
<td></td>
</tr>
<tr>
<td>26-30 years</td>
<td>35 (25.5%)</td>
<td>53 (36.8%)</td>
<td>88 (31.1%)</td>
<td></td>
</tr>
<tr>
<td>31 years and above</td>
<td>22 (16.1%)</td>
<td>37 (27.7%)</td>
<td>59 (21.0%)</td>
<td>0.01*</td>
</tr>
<tr>
<td>Marital Status:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>116 (84.7%)</td>
<td>118 (81.9%)</td>
<td>234 (83.3%)</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>8 (5.8%)</td>
<td>6 (4.2%)</td>
<td>14 (5.0%)</td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>5 (3.7%)</td>
<td>5 (3.5%)</td>
<td>10 (3.6%)</td>
<td></td>
</tr>
<tr>
<td>Separated</td>
<td>4 (2.9%)</td>
<td>13 (9.0%)</td>
<td>17 (6.0%)</td>
<td></td>
</tr>
<tr>
<td>Widow</td>
<td>4 (2.9%)</td>
<td>2 (1.4%)</td>
<td>6 (2.1%)</td>
<td>0.047*</td>
</tr>
<tr>
<td>Education:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>57 (41.6%)</td>
<td>64 (44.4%)</td>
<td>121 (43.1%)</td>
<td></td>
</tr>
<tr>
<td>Adult education</td>
<td>8 (5.8%)</td>
<td>9 (6.3%)</td>
<td>17 (6.1%)</td>
<td></td>
</tr>
<tr>
<td>Primary education</td>
<td>27 (19.7%)</td>
<td>32 (22.2%)</td>
<td>59 (21.0%)</td>
<td></td>
</tr>
<tr>
<td>Secondary school</td>
<td>14 (10.2%)</td>
<td>15 (10.4%)</td>
<td>29 (10.3%)</td>
<td></td>
</tr>
<tr>
<td>Certificate level</td>
<td>2 (1.6%)</td>
<td>5 (3.5%)</td>
<td>7 (2.5%)</td>
<td></td>
</tr>
<tr>
<td>Diploma level</td>
<td>21 (15.3%)</td>
<td>15 (10.4%)</td>
<td>36 (12.8%)</td>
<td></td>
</tr>
<tr>
<td>Degree level</td>
<td>8 (5.8%)</td>
<td>4 (2.%)</td>
<td>12 (4.3%)</td>
<td>0.504</td>
</tr>
<tr>
<td>Maternal age (years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median age 26 (16–40)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean age = 26.21 ± 5.43</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significant at p&lt;0.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Majority (43.1%) of the mothers had no formal education, 10.3% had acquired secondary, 21.0% primary education and 17.1% diploma level and above. About 41.6% of the primiparous mothers and 44.4% multiparous mothers had no formal education. More of the primiparous (15.3%) had reached diploma level and above compared to the multiparous counterparts (10.4%). There was however no significant difference in education level between the two groups of mothers (Table 4.1).
4.1.2 Maternal Socio-Economic Characteristics

Overall, majority (62.8%) of the mothers were housewives with 66.4% of them being primiparous and 59.4% multiparous. Overall, 16.8% of the mothers were casual workers and the rest (15.4%) had formal jobs or were self-employed (5.0%) (Table 4.2a). Slightly less than two-thirds (60%) of the mothers (61.9% primiparous and 59.2% multiparous) depended exclusively on their husbands for income with 6.9% relying on their own businesses and 23.6% (23.1% primiparous and 23.9% multiparous) dependent on salaried job. Over one-third (34.9%) of the married women reported their husbands had formal jobs while those who were self-employment were 33.5% and the casualties were 31.6%. The numbers were almost similar for both groups of mothers (Table 4.2a).
Table 4.2a: Socio-Economic Characteristics of the Mothers

<table>
<thead>
<tr>
<th>Maternal occupation</th>
<th>Primiparous</th>
<th></th>
<th>Multiparous</th>
<th></th>
<th>Total</th>
<th>Chi-square test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N = 137</td>
<td></td>
<td>N = 144</td>
<td></td>
<td>N=281</td>
<td></td>
</tr>
<tr>
<td>Casual worker</td>
<td>19</td>
<td>13.9</td>
<td>27</td>
<td>19.6</td>
<td>46</td>
<td>16.8</td>
</tr>
<tr>
<td>House wife</td>
<td>91</td>
<td>66.4</td>
<td>86</td>
<td>59.4</td>
<td>177</td>
<td>62.8</td>
</tr>
<tr>
<td>Formal job</td>
<td>19</td>
<td>13.9</td>
<td>24</td>
<td>16.8</td>
<td>43</td>
<td>15.4</td>
</tr>
<tr>
<td>Self employed</td>
<td>8</td>
<td>5.8</td>
<td>7</td>
<td>4.2</td>
<td>15</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Husband’s Occupation:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casual worker</td>
<td>44</td>
<td>31.8</td>
<td>43</td>
<td>31.4</td>
<td>86</td>
<td>31.6</td>
</tr>
<tr>
<td>Formal job</td>
<td>55</td>
<td>39.4</td>
<td>40</td>
<td>30.7</td>
<td>95</td>
<td>34.9</td>
</tr>
<tr>
<td>Self employed</td>
<td>39</td>
<td>28.8</td>
<td>52</td>
<td>37.9</td>
<td>91</td>
<td>33.5</td>
</tr>
</tbody>
</table>

Maternal Income sources

<table>
<thead>
<tr>
<th></th>
<th>Primiparous</th>
<th></th>
<th>Multiparous</th>
<th></th>
<th>Total</th>
<th>Chi-square test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N = 137</td>
<td></td>
<td>N = 144</td>
<td></td>
<td>N=281</td>
<td></td>
</tr>
<tr>
<td>Salaried job</td>
<td>31</td>
<td>23.1</td>
<td>34</td>
<td>23.9</td>
<td>65</td>
<td>23.6</td>
</tr>
<tr>
<td>Husband</td>
<td>83</td>
<td>61.9</td>
<td>84</td>
<td>59.2</td>
<td>167</td>
<td>60.5</td>
</tr>
<tr>
<td>Own business</td>
<td>9</td>
<td>6.7</td>
<td>10</td>
<td>7.0</td>
<td>19</td>
<td>6.9</td>
</tr>
<tr>
<td>Other sources</td>
<td>11</td>
<td>8.2</td>
<td>14</td>
<td>9.9</td>
<td>25</td>
<td>9.0</td>
</tr>
</tbody>
</table>

House type:

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rent</td>
<td>45</td>
<td>32.8</td>
<td>35</td>
<td>25.0</td>
<td>80</td>
<td>28.9</td>
</tr>
<tr>
<td>Own house</td>
<td>63</td>
<td>46.0</td>
<td>62</td>
<td>44.3</td>
<td>125</td>
<td>45.1</td>
</tr>
<tr>
<td>Manyatta*</td>
<td>28</td>
<td>20.5</td>
<td>41</td>
<td>29.3</td>
<td>69</td>
<td>24.9</td>
</tr>
</tbody>
</table>

Number of rooms: Mean (sd) 2.1±1.1

Rent per month in Kenyan Shilling (Ksh): Mean (sd) 1500(1280.80)

*Manyatta is a temporary settlement used for shelter made of simple and available local materials like twigs and thatches.

In Table 4.2a above, over two-fifths of the participants (45.1%) lived in their own houses with majority of the primiparous (46%) compared to the multiparous (44.3%) mothers living in their own houses. Below a third (28.9%) of the mothers lived in rented houses, 45.1% had their own houses and 24.9% in manyattas (semi-permanent structures). The mean number of rooms per house was 2.1 (±1.1). The mean rent paid per month by those who rented houses was Kenya shillings (ksh)
1500 (±1210.80) (Table 4.2a). There were no significant difference between maternal parity and maternal socioeconomic characteristics (Table 4.2a).

### Table 4.2b: Socio-Economic Characteristics of the Household

<table>
<thead>
<tr>
<th></th>
<th>Primiparous</th>
<th></th>
<th>Multiparous</th>
<th></th>
<th>Total</th>
<th></th>
<th>Chi-square test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N = 137</td>
<td>N = 144</td>
<td>N = 281</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>House Construction materials:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron Sheet</td>
<td>34</td>
<td>26.0</td>
<td>32</td>
<td>22.5</td>
<td>66</td>
<td>24.2</td>
<td></td>
</tr>
<tr>
<td>Mud &amp; wooden</td>
<td>25</td>
<td>19.1</td>
<td>17</td>
<td>12.0</td>
<td>42</td>
<td>15.4</td>
<td></td>
</tr>
<tr>
<td>Cement &amp; stones</td>
<td>42</td>
<td>32.1</td>
<td>52</td>
<td>36.6</td>
<td>94</td>
<td>34.4</td>
<td></td>
</tr>
<tr>
<td>Burnt bricks</td>
<td>5</td>
<td>3.8</td>
<td>2</td>
<td>1.4</td>
<td>7</td>
<td>2.6</td>
<td></td>
</tr>
<tr>
<td>Mud &amp; Cement</td>
<td>6</td>
<td>4.6</td>
<td>3</td>
<td>2.1</td>
<td>9</td>
<td>3.3</td>
<td></td>
</tr>
<tr>
<td>Wooden twigs</td>
<td>16</td>
<td>12.2</td>
<td>32</td>
<td>22.5</td>
<td>48</td>
<td>17.6</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>2.3</td>
<td>4</td>
<td>2.8</td>
<td>7</td>
<td>2.6</td>
<td>0.125</td>
</tr>
<tr>
<td><strong>Ownership of items:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radio</td>
<td>60</td>
<td>43.8</td>
<td>53</td>
<td>36.8</td>
<td>113</td>
<td>40.2</td>
<td></td>
</tr>
<tr>
<td>Bicycle</td>
<td>24</td>
<td>17.5</td>
<td>22</td>
<td>15.3</td>
<td>46</td>
<td>16.4</td>
<td></td>
</tr>
<tr>
<td>Television (TV)</td>
<td>23</td>
<td>16.8</td>
<td>19</td>
<td>13.2</td>
<td>42</td>
<td>14.9</td>
<td></td>
</tr>
<tr>
<td>Video/ Digital Video Disc (DVD)</td>
<td>8</td>
<td>5.8</td>
<td>8</td>
<td>5.6</td>
<td>16</td>
<td>5.7</td>
<td></td>
</tr>
<tr>
<td>Mobile phone</td>
<td>10</td>
<td>7.3</td>
<td>21</td>
<td>14.6</td>
<td>31</td>
<td>11.0</td>
<td></td>
</tr>
<tr>
<td>Motorcycle</td>
<td>2</td>
<td>1.5</td>
<td>0</td>
<td>0.0</td>
<td>2</td>
<td>0.7</td>
<td></td>
</tr>
<tr>
<td>Car/truck</td>
<td>0</td>
<td>0.0</td>
<td>4</td>
<td>2.8</td>
<td>4</td>
<td>1.4</td>
<td></td>
</tr>
<tr>
<td>Donkey/cart</td>
<td>1</td>
<td>0.7</td>
<td>3</td>
<td>2.1</td>
<td>4</td>
<td>1.4</td>
<td></td>
</tr>
<tr>
<td>Land</td>
<td>5</td>
<td>3.6</td>
<td>8</td>
<td>5.6</td>
<td>13</td>
<td>4.6</td>
<td></td>
</tr>
<tr>
<td>Cows</td>
<td>38</td>
<td>27.7</td>
<td>32</td>
<td>22.2</td>
<td>70</td>
<td>24.9</td>
<td></td>
</tr>
<tr>
<td>Goat</td>
<td>46</td>
<td>33.6</td>
<td>47</td>
<td>32.6</td>
<td>93</td>
<td>33.1</td>
<td></td>
</tr>
<tr>
<td>Sheep</td>
<td>13</td>
<td>9.5</td>
<td>8</td>
<td>5.6</td>
<td>2</td>
<td>7.5</td>
<td></td>
</tr>
<tr>
<td>Chicken</td>
<td>16</td>
<td>11.7</td>
<td>24</td>
<td>16.7</td>
<td>40</td>
<td>14.2</td>
<td></td>
</tr>
<tr>
<td>Camel</td>
<td>8</td>
<td>5.9</td>
<td>13</td>
<td>9.1</td>
<td>21</td>
<td>7.4</td>
<td>0.134</td>
</tr>
<tr>
<td><strong>Source of lighting:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kerosene</td>
<td>50</td>
<td>37.0</td>
<td>56</td>
<td>39.4</td>
<td>106</td>
<td>38.3</td>
<td></td>
</tr>
<tr>
<td>Electricity</td>
<td>68</td>
<td>49.6</td>
<td>55</td>
<td>38.2</td>
<td>123</td>
<td>43.8</td>
<td></td>
</tr>
<tr>
<td>Candle</td>
<td>12</td>
<td>9.4</td>
<td>23</td>
<td>16.0</td>
<td>36</td>
<td>12.8</td>
<td></td>
</tr>
<tr>
<td>Solar</td>
<td>4</td>
<td>2.9</td>
<td>8</td>
<td>5.6</td>
<td>12</td>
<td>4.3</td>
<td>0.184</td>
</tr>
<tr>
<td><strong>Source of Cooking:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charcoal</td>
<td>67</td>
<td>48.9</td>
<td>61</td>
<td>42.4</td>
<td>128</td>
<td>45.6</td>
<td></td>
</tr>
<tr>
<td>Firewood</td>
<td>48</td>
<td>36.4</td>
<td>66</td>
<td>47.4</td>
<td>104</td>
<td>47.0</td>
<td></td>
</tr>
<tr>
<td>Kerosene</td>
<td>12</td>
<td>8.8</td>
<td>7</td>
<td>4.9</td>
<td>19</td>
<td>6.8</td>
<td></td>
</tr>
<tr>
<td>Liquefied Petroleum Gas (LPG)</td>
<td>9</td>
<td>6.6</td>
<td>6</td>
<td>4.2</td>
<td>15</td>
<td>5.3</td>
<td>0.152</td>
</tr>
</tbody>
</table>

According to Table 4.2b above, most of the respondents’ houses were semi-permanent in nature and 24.2% of the houses had roofs made of iron sheets. The walls were mainly made of cement and stones (34.4%), with some made of mud and wood (15.4%), wooden twigs (17.6%) and bricks (2.6%). At least 40.2% of the
study population owned a radio, 16.4% bicycle, 14.9% television, 11.0% phone and only 4.6% owned land. The animals mainly owned were 33.1% goats and 24.9% cows (Table 4.2b). Over a third of the households (38.3%) used kerosene for lighting, 12.8% used candle and 43.8% used electricity. Charcoal (45.6%) and firewood (47.0%) were the main source of cooking fuel for the households while the use of cleaner source of cooking energy like Liquefied Petroleum Gas (LPG) was uncommon (5.3%). There were no significant difference between the socio-economic characteristics of the primaparous and multiparous mothers (Table 4.2b).

4.2 Delivery History of the Mothers

Slightly over a half of the mothers (54.9%) reported to have delivered their babies at the health facility while the rest delivered their babies either at home (35.8%) or at Traditional Birth Attendants (TBA’s) house (9.3%). Whereas 11.9% of the multiparous mothers delivered at TBA’s house less than 7% of primiparous delivered at TBA’s house. More primiparous mothers delivered at health facility (58.8%) compared to their multiparous (51.0%) counterparts (Figure 4.1). There was however no significant difference between maternal delivery place and parity (Figure 4.1)
4.2.1 Maternal Type of Delivery

Majority of the mothers (69.8%) delivered through normal vaginal delivery while over 30% delivered through the cesarean section with a higher proportion of primiparous mothers (37.0%) delivering through cesarean section compared to the multiparous (25.7%) mothers (Figure 4.2). Despite more primiparous mothers delivering through cesarean section, there was no significant difference between maternal parity and the type of delivery (Figure 4.2).
Figure 4.2: Maternal Type of Delivery

4.3 Maternal Health Status

4.3.1 Maternal Morbidity

In Table 4.3, small proportion of mothers (12.8%) from both groups reported to have suffered from illness with malaria and painful breasts reported as the most prevalent condition at 10.0% and 5.3% respectively. Less than a quarter (12.4%) of the. Some mothers (7.3%) reported that the illnesses affected their breastfeeding practice with multiparous mothers (9.2%) been affected most compared to their primiparous (5.3%) counterparts (Table 4.3). There were no significant differences in the morbidity between the primiparous and the multiparous.
### Table 4.3: Maternal Morbidity

<table>
<thead>
<tr>
<th></th>
<th>Primiparous</th>
<th>Multiparous</th>
<th>Total</th>
<th>Chi-square test p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Mothers reported sickness:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>17</td>
<td>19</td>
<td>36</td>
<td>12.4</td>
</tr>
<tr>
<td>No</td>
<td>102</td>
<td>111</td>
<td>213</td>
<td>74.5</td>
</tr>
<tr>
<td>Prevalence of illness:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Painful breasts</td>
<td>8</td>
<td>7</td>
<td>15</td>
<td>5.8</td>
</tr>
<tr>
<td>Malaria</td>
<td>21</td>
<td>7</td>
<td>28</td>
<td>15.3</td>
</tr>
<tr>
<td>Backache</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0.0</td>
</tr>
<tr>
<td>Anemia</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0.7</td>
</tr>
<tr>
<td>Others *</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0.7</td>
</tr>
<tr>
<td>Illness affected breastfeeding:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>7</td>
<td>12</td>
<td>19</td>
<td>5.3</td>
</tr>
<tr>
<td>No (N = 119)</td>
<td>112</td>
<td>118</td>
<td>20</td>
<td>85.7</td>
</tr>
</tbody>
</table>

*Others included: backache, abdominal pain, upper respiratory infections and injuries.*

### 4.3.2 Maternal Breastfeeding Complications

Some mothers (26.8%) reported to have experienced problems in breastfeeding with similar proportions for mothers in the two study groups experiencing the same problems. Among the conditions/problems experienced were: pain in the breast (9.3%), inadequate breastmilk (31.6%) and baby refusing to breastfeed (54.6%). A few of the participants (17.6%) reported to have had the experienced the problems interfere with breastfeeding (Table 4.4). There was no significant difference in maternal breastfeeding complications between the primiparous and multiparous mothers.
Table 4.4: Maternal Breastfeeding Complications

<table>
<thead>
<tr>
<th>Experienced problems in breastfeeding:</th>
<th>Primiparous N = 137</th>
<th>Multiparous N = 144</th>
<th>Total N=281</th>
<th>Chi-square p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>33 26.8</td>
<td>35 26.7</td>
<td>68 26.8</td>
<td>0.980</td>
</tr>
<tr>
<td>No</td>
<td>90 65.7</td>
<td>96 66.7</td>
<td>186 66.2</td>
<td></td>
</tr>
</tbody>
</table>

Problems experienced:
- Pain in the breast: 4 6.6, 6 12.8, 10 9.3
- Inadequate breast milk: 23 37.7, 12 25.5, 35 31.6
- Baby refusing to B/F: 31 50.8, 28 59.6, 59 54.6
- Other problems*: 3 4.9, 1 2.1, 4 3.7, 0.335

Problems interfered with BF:
- Yes: 22 17.9, 23 17.6, 45 17.6
- No: 101 20.4, 108 82.4, 209 84.0, 0.627

*Other problems that interfered with maternal breastfeeding included pressure from grandmothers, backache and baby positioning.

4.4 Infant Characteristics

4.4.1 Infant Age and Gender

In Table 4.5, about half (51.6%) of the infants were female and the rest were male (48.4%). The primiparous mothers had more male (53.3%) than the multiparous mothers (43.8%) and vice versa but there was no significant difference between the two groups (Table 4.5). In regards to infants’ completed years; 26.3% had completed 1 months, 25.3% completed 2 months, 17.4% three months, 14.2% months and 16.7 completed months. There was however no significant difference between the two groups of mothers.
### Table 4.5: Infant Characteristics

<table>
<thead>
<tr>
<th>Gender</th>
<th>Primiparous N = 137</th>
<th>Multiparous N = 144</th>
<th>Total N=281</th>
<th>Chi-square</th>
<th>n</th>
<th>%</th>
<th>n</th>
<th>%</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>73 53.3</td>
<td>63 43.8</td>
<td>136 48.4</td>
<td>0.110</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>64 46.7</td>
<td>81 56.3</td>
<td>143 51.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age in completed months:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>36 26.3</td>
<td>38 26.4</td>
<td>74 26.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>26 19</td>
<td>45 31.3</td>
<td>71 25.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>29 21.2</td>
<td>20 13.9</td>
<td>49 17.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>21 15.3</td>
<td>19 13.2</td>
<td>40 14.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>25 18.2</td>
<td>22 15.3</td>
<td>47 16.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.141</td>
</tr>
</tbody>
</table>

#### 4.4.2 Infant Health Status

Infant morbidity prevalence was determined based on a two week-recall. Less than one third (26.0%) of the infants was reported to have been sick; 26.3% of primiparous and 25.7% multiparous. Of those infants reported to have been sick, 48.1% suffered from diarrheal diseases, 18.2% from vomiting, 10.4% reported to have suffered from fever and the rest had acute respiratory infections (5.2%) and malaria (9.7%). Despite having more of the multiparous mothers reporting vomiting and malaria as the most prevalent illnesses among their infants and primiparous mothers reporting fever, there was no significant difference in morbidity among the infants by parity of the mothers. Slightly lower than half (43.1%) of the mothers reported to have sought medical treatment for the sick infant with 50.7% of the mothers seeking treatment from private health facility, 35.2% from public health facility, 0.7% from relatives and 8.5% purchased drugs for the child directly from a chemist (Table 4.6). Of the mothers who did not seek medical treatment for the sick child. 12.5% cited lack of money, 7.1% reported that infants’ condition was not serious and 1.4% mentioned other reasons like accessibility of the health institutions
and poor health workers attitudes towards patients. At the time of the study less than 10% of the infants to have been reported sick were on medication and 6.4% reported that the illnesses interfered with breastfeeding (Table 4.6).

Table 4.6: Prevalence of Morbidity Among Infants

<table>
<thead>
<tr>
<th></th>
<th>Primiparous N = 137</th>
<th>Multiparous N = 144</th>
<th>Total N=281</th>
<th>Chi-square p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infant morbidity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sick</td>
<td>36 (26.3%)</td>
<td>37 (25.7%)</td>
<td>73 (26%)</td>
<td></td>
</tr>
<tr>
<td>Not sick</td>
<td>101 (73.7%)</td>
<td>107 (74.3%)</td>
<td>208 (74%)</td>
<td>0.655</td>
</tr>
<tr>
<td><strong>Prevalence of common illnesses:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARI's</td>
<td>4 (4.8%)</td>
<td>4 (5.6%)</td>
<td>8 (5.2%)</td>
<td></td>
</tr>
<tr>
<td>Fever</td>
<td>9 (10.8%)</td>
<td>7 (9.9%)</td>
<td>16 (10.4%)</td>
<td></td>
</tr>
<tr>
<td>Diarrhea</td>
<td>45 (54.2%)</td>
<td>29 (40.8%)</td>
<td>74 (48.1%)</td>
<td></td>
</tr>
<tr>
<td>Vomiting</td>
<td>12 (14.5%)</td>
<td>16 (22.5%)</td>
<td>28 (18.2%)</td>
<td></td>
</tr>
<tr>
<td>Malaria</td>
<td>7 (8.4%)</td>
<td>8 (11.3%)</td>
<td>15 (9.7%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>3 (3.6%)</td>
<td>1 (1.4%)</td>
<td>4 (2.6%)</td>
<td>0.488</td>
</tr>
<tr>
<td><strong>Sought assistance for sick child:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>26 (45.6%)</td>
<td>31 (40.7%)</td>
<td>50 (43.1%)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>31 (54.4%)</td>
<td>35 (59.3%)</td>
<td>66 (23.5%)</td>
<td>0.591</td>
</tr>
<tr>
<td><strong>Where assistance was sought:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public health facility</td>
<td>15 (40.5%)</td>
<td>10 (29.4%)</td>
<td>25 (35.2%)</td>
<td></td>
</tr>
<tr>
<td>Private health facility</td>
<td>18 (48.6%)</td>
<td>18 (52.9%)</td>
<td>36 (50.7%)</td>
<td></td>
</tr>
<tr>
<td>Drugs from a chemist</td>
<td>3 (8.1%)</td>
<td>3 (8.8%)</td>
<td>6 (8.5%)</td>
<td></td>
</tr>
<tr>
<td>Relatives</td>
<td>0 (0%)</td>
<td>2 (1.4%)</td>
<td>2 (0.7%)</td>
<td>0.578</td>
</tr>
<tr>
<td><strong>Reason for not seeking assistance:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condition not serious</td>
<td>6 (4.4%)</td>
<td>14 (9.7%)</td>
<td>20 (7.1%)</td>
<td></td>
</tr>
<tr>
<td>Lack of money</td>
<td>20 (14.6%)</td>
<td>15 (10.4%)</td>
<td>35 (12.5%)</td>
<td></td>
</tr>
<tr>
<td>Others *</td>
<td>2 (1.5%)</td>
<td>2 (1.4%)</td>
<td>4 (1.4%)</td>
<td>0.164</td>
</tr>
<tr>
<td><strong>Baby currently under treatment:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>14 (10.2%)</td>
<td>11 (7.6%)</td>
<td>25 (8.9%)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>30 (21.9%)</td>
<td>26 (18.1%)</td>
<td>56 (19.9%)</td>
<td>0.839</td>
</tr>
<tr>
<td><strong>Whether illness affected BF:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>12 (8.8%)</td>
<td>6 (4.2%)</td>
<td>18 (6.4%)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>25 (18.2%)</td>
<td>31 (21.5%)</td>
<td>56 (19.9%)</td>
<td>0.240</td>
</tr>
</tbody>
</table>

*Others include: reasons like accessibility of the health institutions and poor health workers attitudes towards patients. BF = breastfeeding. ARI’s = Acute Respiratory Infections.

In Table 4.6, a higher proportion of the primiparous (45.5%) mothers reported to have sought assistance for their sick infants compared to the multiparous mothers (40.7%). Among the mothers who sought medical treatment; majority of the
primiparous mothers (40.5%) opted for public health facility compared to the multiparous mothers (29.4%) and more of the multiparous mothers (52.9%) sought assistance from private health facility compared to the primiparous mothers (48.6%). There were no significant differences in infant health characteristics and the health seeking behavior between multiparous and primiparous mothers (Table 4.6).

4.5 Infant Feeding Practices

4.5.1 Early Infant Feeding Practices

According to Table 4.7, majority of the mothers had initiated breastfeeding within the 1st one hour of life with 74.1% of the primiparous and 71.5% of the multiparous mothers with no significant difference between the two groups of mothers (p=0.443). Of the 75.3% of all the mothers who gave colostrum to their infants within the first 3 days of life, 73.3% were primparous and 77.1% were multiparous mothers giving colostrum. There was no significant difference between the two groups of mothers (p=0.761). Use of pre-lacteals was more prevalent among the multiparous (53.8%) compared to 46.2% of primiparous with plain water (70.8%), glucose water (20.8%) and formula milk(8.4%) as the most common pre-lacteal feeds with no significant differences between the primiparous and multiparous mothers (p<0.05). The mothers this to attributed delayed milk production (83.0%), baby un-well (14.2%) and other reasons (2.8%) like mother’s occupation as the reasons for early introduction of pre-lacteal feeds (Table 4.7).
## Table 4.7: Early Infant Feeding Practices

<table>
<thead>
<tr>
<th></th>
<th>Primiparous</th>
<th>Multiparous</th>
<th>Total</th>
<th>Chi-square</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td><strong>Breastfeeding initiation:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within 1 hour</td>
<td>97</td>
<td>74.1</td>
<td>103</td>
<td>71.5</td>
</tr>
<tr>
<td>&gt;1 hour to &lt; 24 hours</td>
<td>32</td>
<td>24.4</td>
<td>32</td>
<td>22.2</td>
</tr>
<tr>
<td>24 hours and more</td>
<td>2</td>
<td>1.5</td>
<td>4</td>
<td>2.8</td>
</tr>
<tr>
<td><strong>Gave colostrum:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>96</td>
<td>73.3</td>
<td>108</td>
<td>77.1</td>
</tr>
<tr>
<td>No</td>
<td>35</td>
<td>26.7</td>
<td>32</td>
<td>22.9</td>
</tr>
<tr>
<td><strong>Gave pre-lacteals:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-lacteal feeds given:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plain boiled water</td>
<td>34</td>
<td>69.4</td>
<td>41</td>
<td>71.9</td>
</tr>
<tr>
<td>Glucose water</td>
<td>10</td>
<td>20.4</td>
<td>12</td>
<td>21.1</td>
</tr>
<tr>
<td>Formula milk</td>
<td>5</td>
<td>10.2</td>
<td>4</td>
<td>7.0</td>
</tr>
<tr>
<td><strong>Reason for giving pre-lacteals:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delayed milk production</td>
<td>42</td>
<td>85.7</td>
<td>46</td>
<td>80.7</td>
</tr>
<tr>
<td>Baby unwell</td>
<td>6</td>
<td>12.3</td>
<td>9</td>
<td>15.8</td>
</tr>
<tr>
<td>Other reasons</td>
<td>1</td>
<td>2.0</td>
<td>2</td>
<td>3.5</td>
</tr>
<tr>
<td><strong>Gave post-lacteals:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>41</td>
<td>30.0</td>
<td>35</td>
<td>24.3</td>
</tr>
<tr>
<td>No</td>
<td>96</td>
<td>70.0</td>
<td>109</td>
<td>75.7</td>
</tr>
<tr>
<td><strong>Post-lacteal feeds given:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plain boiled water</td>
<td>18</td>
<td>44.0</td>
<td>13</td>
<td>37.1</td>
</tr>
<tr>
<td>Glucose water</td>
<td>9</td>
<td>22.0</td>
<td>5</td>
<td>14.3</td>
</tr>
<tr>
<td>Non-maternal milk</td>
<td>8</td>
<td>19.5</td>
<td>5</td>
<td>14.3</td>
</tr>
<tr>
<td>Formula</td>
<td>2</td>
<td>4.8</td>
<td>3</td>
<td>8.6</td>
</tr>
<tr>
<td>Tea/Juice</td>
<td>3</td>
<td>7.3</td>
<td>7</td>
<td>20.0</td>
</tr>
<tr>
<td>Mashed Vegetable</td>
<td>1</td>
<td>2.4</td>
<td>2</td>
<td>5.7</td>
</tr>
<tr>
<td><strong>Reasons for giving post-lacteals:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sooth stomachache</td>
<td>7</td>
<td>17.1</td>
<td>11</td>
<td>31.4</td>
</tr>
<tr>
<td>Baby gets hungry</td>
<td>11</td>
<td>26.9</td>
<td>8</td>
<td>22.9</td>
</tr>
<tr>
<td>Advised by relatives</td>
<td>6</td>
<td>14.6</td>
<td>4</td>
<td>11.4</td>
</tr>
<tr>
<td>Mother not producing enough milk</td>
<td>5</td>
<td>12.2</td>
<td>8</td>
<td>22.9</td>
</tr>
<tr>
<td>Advised by healthcare providers</td>
<td>1</td>
<td>2.4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Advised by TBA</td>
<td>9</td>
<td>22.0</td>
<td>1</td>
<td>2.6</td>
</tr>
<tr>
<td>Other reasons</td>
<td>2</td>
<td>4.0</td>
<td>3</td>
<td>8.5</td>
</tr>
</tbody>
</table>

About a quarter of the mothers (27%) gave post-lacteals feeds and this was more common among the primiparous mothers (30%) compared to the 24.3% of the multiparous mothers though the difference was not statistically significant (Chi-square test; p=0.435). Among the post-lacteals given included; plain boiled water...
(40.8%), glucose water (18.3%), cow’s milk (17.1%), tea/ juice (13.2%) and mashed vegetables/fruits (4.0%). Both the multiparous and primiparous gave a number of common reasons for giving post-lacteal feeds (Table 4.7). These included: to soothe baby’s stomach pain (23.7%), that the baby was getting hungry (25%), mothers were not producing enough milk (17.1%), was advised by TBA’s (13.1%) and healthcare providers (1.3%). There was however no relationship between parity (chi square test; p=0.540).

4.6 Infant Feeding Practices Since Birth
Majority (82.9%) of the mothers reported to have ever breastfed their infants; primiparous mothers (83.9%) and multiparous mothers (81.9%) while 85.1% did predominant breastfeeding (86.1% primiparous and 88.3% multiparous mothers). At the time of the study, 73.7% of the primiparous and 70.8% of the multiparous were still breastfeeding their infants. Slightly over 17% of the mothers never breastfed their infants (Figure 4.3). Of the mothers who never breastfed; 60.5% cited lack of milk, 21% attributed to traditional beliefs, and 5% did not want to breastfed at all. There was no difference in infant feeding practices since birth between multiparous and primiparous mothers (data not presented in the graph) (Figure 4.3).
4.7 Exclusive Breastfeeding Practices

Exclusive breastfeeding rate was defined as those infants 0-5 months old who were exclusively breastfed based on 24 hour recalls. Secondly, exclusive breastfeeding is also reported for children 0-1 month, 1-2 months, 2-3 months, 3-4 months and 4-5 months as recommended by WHO (2008).

4.7.1 Exclusive Breastfeeding for Infants 0-5 Months Old Based on Cross-Sectional Data

Overall, the EBF rate for infants 0-5 months old based on 24-hour recall was 45.5% with multiparous mothers having higher EBF rate (49.3%) compared to their primiparous counterparts at 39.4% (Figure 4.4). There was no relationship between parity and exclusive breastfeeding rate (Chi square test; p=0.540).
The prevalence of exclusive breastfeeding for all the mothers in the two groups was 91.2% at 0-1 month, 84.4% at 1-2 months, 73.8% at 2-3 months, 53.4% at 3-4 months, 48.7% at 4-5 months and 44.5% at 5-6 months (Figure 4.5). The monthly EBF prevalence for the primiparous mothers was 90.2% at 0-1 month, 80.6% at 1-2 months, 72.4% at 2-3 months, 50.3% at 3-4 months, 45.1% at 4-5 months and 39.4% at 5-6 months. The prevalence of EBF among multiparous mothers was 92.2% at 0-1 month, 88.2% at 1-2 months, 75.1% at 2-3 months, 56.4% at 3-4 months, 52.2% at 4-5 months and 49.3% at 5-6 months. Multiparous mothers reported higher EBF rates throughout the period 0-6 months with an EBF rate of 49.5% at the end of the 5th month compared to the primaparous mothers at 39.4%. Overall, there was a large drop in the EBF prevalence at 3-4 months from 73.8% to 53.4% and the drop was more prevalent in the primiparous mothers from 72.4% to 50.3% compared to multiparous mothers from 75.1% to 56.4%. There was however no relationship between parity and the EBF rate throughout the 6-month period (Chi square test;
p=0.644). There was no significant difference in the prevalence of EBF at 0-1 month, 1-2 months, 2-3 months, 3-4 months, 4-5 months and 5-6 months between primiparous and multiparous mothers (Figure 4.5).

![Graph showing monthly EBF rates based on 24 hour recall](image)

**Figure 4.5: Monthly EBF Rates Based on 24 Hour Recall**

### 4.8 Maternal Knowledge on Breastfeeding Issues

Overall, the mothers were knowledgeable on breastfeeding. Slightly over 91.1% of the mothers stated that breast milk should be baby’s first feed with the primiparous mothers at 95.6% and multiparous mothers at 86.8%. More primiparous mothers (92.7%) initiated breastfeeding within the first hour compared to the multiparous mothers (90.3%) (Table 4.8). A larger proportion (86.1%) of mothers agreed that colostrum should be fed to infants (87.6% primiparous and 84.7% multiparous). Overall, 78.3% of the women said breast milk alone can sustain the infant for 6 months. Majority (80.7%) of the mothers knew that breastfeeding protects baby from illness with more of the primiparous (82.4%) agreeing with the statement compared to their multiparous (79.2%) counterparts. The primiparous mothers (72.8%) were more knowledgeable than the multiparous mothers (66.4%) in the
aspect of knowledge that exclusive breastfeeding protects mothers from pregnancy. A higher proportion of primiparous mothers (72.8%) knew that mothers should express breast milk to be fed to their babies when they are away from home compared to multiparous mothers (66.7%). On whether a mother who gets pregnant should continue breastfeeding her baby, more of the multiparous mothers (57.8%) were in support of the statement compared to the multiparous mothers (56.5%). Primiparous mothers (75.9%) were more knowledgeable than the multiparous mothers (70.2%) on the aspect of knowledge that tested on whether a baby should be fed on demand or not (Table 4.8). Mothers scored averagely (54.2%) on the aspect of knowledge that a pregnant woman can breastfeed her child. There was no relationship between parity and this aspect of the knowledge (Chi-square test; p=0.848).

In comparing the two groups of mothers, the primiparous mothers were more knowledgeable in almost all aspects of knowledge that were tested compared to the multiparous mothers. However, the only significant difference between the two groups was on the aspect of knowledge about the infant’s first feed. A significantly higher percentage of primiparous mothers (95.6%) compared to the multiparous (86.8%) knew that breast milk should be the baby’s first feed (Chi-square test; p=0.009) (Table 4.8).
### Table 4.8: Maternal Knowledge on Breastfeeding

<table>
<thead>
<tr>
<th>Aspect of Knowledge:</th>
<th>Primiparous</th>
<th></th>
<th></th>
<th>Multiparous</th>
<th></th>
<th></th>
<th>Total</th>
<th>N=281</th>
<th>Chi-square test</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N = 137</td>
<td>N = 144</td>
<td>N=281</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast milk should be baby’s first feed</td>
<td>131 95.6</td>
<td>125 86.8</td>
<td>256 91.1</td>
<td>0.009*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baby should be put to breast within 1 hour of birth</td>
<td>127 92.7</td>
<td>130 90.3</td>
<td>257 91.5</td>
<td>0.468</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colostrum should be fed to the baby</td>
<td>120 87.6</td>
<td>122 84.7</td>
<td>242 861</td>
<td>0.487</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast milk alone can sustain baby for 6 months</td>
<td>107 78.1</td>
<td>113 78.5</td>
<td>220 78.3</td>
<td>0.940</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast feeding protects baby from illness</td>
<td>112 82.4</td>
<td>114 79.2</td>
<td>226 80.7</td>
<td>0.499</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breast feeding protects mother from pregnancy</td>
<td>99 72.8</td>
<td>100 69.4</td>
<td>199 71.1</td>
<td>0.537</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expressed breast milk should be fed to the baby</td>
<td>99 72.8</td>
<td>96 66.7</td>
<td>195 69.6</td>
<td>0.265</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semi-solid food to be introduced at six months</td>
<td>102 75.0</td>
<td>97 67.4</td>
<td>199 71.1</td>
<td>0.159</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A pregnant woman can breastfeed her baby</td>
<td>78 57.8</td>
<td>81 56.5</td>
<td>159 54.2</td>
<td>0.848</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A baby should be breast fed on demand</td>
<td>104 75.9</td>
<td>102 70.2</td>
<td>206 73.3</td>
<td>0.321</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at $p<0.05$

### 4.8.1: Maternal Knowledge Score on the Practice of EBF

Knowledge score was calculated on the different aspects of breastfeeding that were covered in the questionnaire. The mothers who got the correct response scored 1 for each of the responses while those who did not answer correctly scored 0. The total score was out of 10. The mean knowledge score for the primigravida mothers was $7.93 \pm 2.10$ and $7.49 \pm 2.20$ for the multiparous (Table 4.9).
### Table 4.9: Maternal Knowledge on the Practice of EBF

<table>
<thead>
<tr>
<th>Variable</th>
<th>Primiparous</th>
<th>Multiparous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge score</td>
<td>Mean 7.93 (± 2.10)</td>
<td>Mean 7.49 (± 2.20)</td>
</tr>
</tbody>
</table>

p<0.05

### 4.9 Maternal Attitude on Breastfeeding Issues

To determine the maternal attitudes towards breastfeeding issues, the strongly disagree (SD) and disagree (D) categories were collapsed into one response category (disagree) while strongly agree (SA) and agree (A) into another one (agree). The neither agree nor disagree responses were analyzed as a separate category (N). Overall, mothers’ attitudes towards breastfeeding issues were positive with no differences between the study groups.

According to table 4.10, large proportion of mothers (95.1%) believed that EBF is beneficial to the child and both groups of mothers scored more or less the same (94.9% primiparous and 95.1% multiparous). In terms of the age of the mother influencing her ability to practice EBF, 14.6% of the primiparous and 14.0% of the multiparous mothers indicated that the age of the mother does not influence her ability to practice EBF (Table 4.10). The majority (65.5%) of the primiparous mothers and 63.9% of the multiparous reported that a baby can survive without water for the first 6 months of life. About half of the women in both groups; 49.6% primiparous and 52.5% multiparous were of the opinion that husbands should be involved in decision making on whether to EBF or not. Overall, less than half of the women in both groups (48.5%) disagreed that animal milk is suitable for a new baby with 54.0% of the primiparous and 43.1% doing so. About half (54.5%) the mothers
in both groups were of the opinion that breast milk is adequate for babies 2 months old whereas 27.8% of the primiparous and 38.9% of the multiparous disagreed that infant formula is the better choice for working mothers (Table 4.10).

The majority of the mothers (87.7% primiparous and 79.2% multiparous) agreed that breastfed babies are healthier than non-breastfed babies and the difference was significant (p<0.05). Similarly, 9.5% of primiparous and 9.0% multiparous mothers disagreed that breast milk is more easily digestible than animal milk and there was significant difference between the two groups (p<0.05). A minority of the mothers (8.6%) of the mothers from both groups disagreed that the number of times a mother has given birth will influence her ability to EBF. Despite mothers’ high knowledge on the benefits of EBF, over half (52.1%) of the mothers from both groups (52.9% primiparous and 52.1% multiparous) agreed that an infant cannot survive without water (Table 4.10).
Table 4.10: Maternal Attitude Towards Breastfeeding

<table>
<thead>
<tr>
<th>Aspects of Attitude</th>
<th>Primiparous</th>
<th>Multiparous</th>
<th>Total</th>
<th>Chi Square</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>D % N % A %</td>
<td>D % N % A %</td>
<td>D % N % A %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Believe that EBF is beneficial to the Child</td>
<td>4.4 0.7 94.9</td>
<td>3.5 1.4 95.1</td>
<td>3.9 1.1 95.1</td>
<td>0.190</td>
<td></td>
</tr>
<tr>
<td>The age of the mother influences her ability to EBF</td>
<td>14.6 7.3 78.1</td>
<td>14.0 13.0 73.0</td>
<td>14.5 10.3 76.0</td>
<td>0.096</td>
<td></td>
</tr>
<tr>
<td>A baby can survive without water</td>
<td>29.4 5.1 65.5</td>
<td>29.2 6.9 63.9</td>
<td>29.5 6.0 63.9</td>
<td>0.919</td>
<td></td>
</tr>
<tr>
<td>Husbands should be involved in decision making on whether to EBF</td>
<td>40.9 9.5 49.6</td>
<td>37.8 9.7 52.5</td>
<td>39.3 9.6 52.5</td>
<td>0.345</td>
<td></td>
</tr>
<tr>
<td>Animal milk is suitable for a new born baby</td>
<td>54.0 8.8 37.2</td>
<td>43.1 13.2 43.7</td>
<td>48.5 11.0 48.5</td>
<td>0.057</td>
<td></td>
</tr>
<tr>
<td>Breast milk is inadequate for babies 2 months</td>
<td>53.3 9.5 37.2</td>
<td>55.6 4.9 39.6</td>
<td>54.5 7.1 54.5</td>
<td>0.604</td>
<td></td>
</tr>
<tr>
<td>Formula feeding is better choice for working mothers</td>
<td>27.8 8.7 63.5</td>
<td>38.9 6.9 54.2</td>
<td>33.5 7.8 33.5</td>
<td>0.046</td>
<td></td>
</tr>
<tr>
<td>Breastfed babies are healthier than non- breastfed babies</td>
<td>8.7 3.6 87.7</td>
<td>13.2 7.6 79.2</td>
<td>11.0 5.7 79.2</td>
<td>0.013</td>
<td></td>
</tr>
<tr>
<td>Breast milk is more easily digested than animal milk</td>
<td>9.5 4.4 86.1</td>
<td>14.6 9.0 76.4</td>
<td>12.1 6.7 76.4</td>
<td>0.049</td>
<td></td>
</tr>
<tr>
<td>Infant cannot survive without water besides breast milk</td>
<td>41.2 5.9 52.9</td>
<td>39.6 8.3 52.1</td>
<td>40.4 7.1 52.1</td>
<td>0.084</td>
<td></td>
</tr>
<tr>
<td>Number of times a mother has given birth will influence her ability to EBF</td>
<td>8.8 4.4 86.8</td>
<td>8.4 6.3 85.4</td>
<td>8.6 5.4 85.4</td>
<td>0.661</td>
<td></td>
</tr>
</tbody>
</table>

4.9.1: Maternal attitude score and the practice exclusively breastfeeding

Maternal attitude score was calculated on the different aspects of breastfeeding that were covered in the questionnaire. The responses were recorded with the mothers who got the correct responses scoring 4 for each response and zero for the wrong responses. The total possible score for correct responses in all aspects of attitudes tested was 40. From the composite value, the mothers who scored the highest had
the most positive attitudes. The mean attitude score for the primigravidas mothers was 29.46 ± 5.65 and 28.65 ± 6.40 for the multiparous mothers (Table 4.11). There was no significant difference between maternal attitude score and maternal parity.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Primiparous</th>
<th>Multiparous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude score</td>
<td>Mean 29.46</td>
<td>Mean 28.65</td>
</tr>
<tr>
<td></td>
<td>(± 5.65)</td>
<td>(± 6.40)</td>
</tr>
</tbody>
</table>

### 4.10 Sources and content of breastfeeding information

In reference to table 4.12, over two-thirds (69.2%) of the mothers reported that they had received breastfeeding information. On comparing the two groups of mothers, more primiparous mothers (73.5%) reported to have received breastfeeding information compared to the multiparous (65%). There was however no relationship between the two groups (Chi square test; p=0.125). Mothers’ reported to have received breastfeeding information from diverse sources: - 38.1% from hospital/health facility, 14.1% from family/friends/relatives, 40.0% from TBA’s and 4.7% from the media. Of all the mothers who received breastfeeding information from hospital/health facility, 33.8% received counseling on breastfeeding during antenatal clinic visits, 37.0% at the time of delivery, 24.1% after delivery before discharge and 5.1% during postnatal clinic with 32.1% of them getting counseling contents with EBF, 26.2% receiving counseling sessions with initiating breastfeeding within 1 hour, 11.0% getting contents on managing breast conditions during breastfeeding and the rest getting all information on breastfeeding (Table 4.12). There was a significant association between parity and maternal sources of information (chi square test; p=0.025) with 33.1% of the primiparous mothers receiving breastfeeding information from health facility compared to 43.0% of the
multiparous mothers. While, 49.6% of the primiparous mothers received breastfeeding information from TBA’s compared to their multiparous (30.5%) counterparts (Table 4.12). There was however no association between parity and the time breastfeeding counselling was given to the mothers at the health facilities (chi square test; p=0.806).

Table 4.12: Sources and Content of Breastfeeding Information

<table>
<thead>
<tr>
<th></th>
<th>Primiparous</th>
<th>Multiparous</th>
<th>Total</th>
<th>Chi-square test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N = 137</td>
<td>N = 144</td>
<td>N=281</td>
<td></td>
</tr>
<tr>
<td>Breastfeeding information</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Received information on breastfeeding</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>100</td>
<td>91</td>
<td>191</td>
<td>69.2</td>
</tr>
<tr>
<td>No</td>
<td>36</td>
<td>49</td>
<td>85</td>
<td>30.8</td>
</tr>
<tr>
<td>Source of Breastfeeding</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>information (N = 137)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital/ health facility</td>
<td>42</td>
<td>55</td>
<td>97</td>
<td>38.1</td>
</tr>
<tr>
<td>Family/friends/relatives</td>
<td>16</td>
<td>20</td>
<td>36</td>
<td>14.1</td>
</tr>
<tr>
<td>Media</td>
<td>4</td>
<td>8</td>
<td>12</td>
<td>4.7</td>
</tr>
<tr>
<td>TBA’s</td>
<td>63</td>
<td>39</td>
<td>102</td>
<td>40.0</td>
</tr>
<tr>
<td>Other sources</td>
<td>2</td>
<td>6</td>
<td>8</td>
<td>3.1</td>
</tr>
<tr>
<td>Received Counseling in health facility/hospital</td>
<td></td>
<td></td>
<td></td>
<td>0.025*</td>
</tr>
<tr>
<td>During Antenatal clinic</td>
<td>38</td>
<td>35</td>
<td>73</td>
<td>33.8</td>
</tr>
<tr>
<td>During post-natal clinic</td>
<td>5</td>
<td>6</td>
<td>11</td>
<td>5.1</td>
</tr>
<tr>
<td>After delivery before leaving hosp.</td>
<td>26</td>
<td>26</td>
<td>52</td>
<td>24.1</td>
</tr>
<tr>
<td>At the time of delivery</td>
<td>36</td>
<td>44</td>
<td>80</td>
<td>37.0</td>
</tr>
<tr>
<td>Content of counseling sessions</td>
<td></td>
<td></td>
<td></td>
<td>0.806</td>
</tr>
<tr>
<td>Exclusive breastfeeding for 6 months</td>
<td>20</td>
<td>24</td>
<td>44</td>
<td>32.1</td>
</tr>
<tr>
<td>Initiate breastfeeding within 1 hour</td>
<td>18</td>
<td>18</td>
<td>36</td>
<td>26.2</td>
</tr>
<tr>
<td>Managing breast conditions</td>
<td>7</td>
<td>10</td>
<td>15</td>
<td>11.0</td>
</tr>
<tr>
<td>All information breastfeeding</td>
<td>25</td>
<td>17</td>
<td>42</td>
<td>30.7</td>
</tr>
</tbody>
</table>

Significant at p<0.05

4.11 Maternal Knowledge, Attitudes/Perceptions and Practices of Exclusive Breastfeeding Based on Qualitative Data From Focus Group Discussions

A total of three focus group discussions (FGDs) were conducted; one each with primiparous and multiparous women who practiced EBF and another with those primiparous and multiparous women who did not practice EBF. The discussions
were guided by the questions in the focus group discussion guide and the Key Informant Interview schedules. Since the findings from the FGD’s for those who practiced EBF and those who did not were almost similar, the findings have been presented as one but where there are disparities these have been highlighted.

4.11.1 Findings from the Focus Group Discussion with Primiparous and Multiparous Mothers

4.11.1.1 Mothers’ Understanding of the Concept of Exclusive Breastfeeding

The majority of the mothers had a good understanding of the concept of exclusive breastfeeding and stated that it meant giving the baby only breast milk without even water for six months. Some multiparous mothers reported to have practiced exclusive breastfeeding with their older children.

4.11.1.2 Mother’s Knowledge on Benefits of Exclusive Breastfeeding

The majority of the mothers from both study groups had a good understanding of the benefits of EBF to the child and the mother. A primiparous mother who exclusively breastfed her infant said, “Breastmilk has all the nutrients an infant requires, it is not contaminated and will make the child grow well as required”. The same sentiment was echoed by almost all the mothers who practiced and those who did not practice EBF. A multiparous mother reported that, “Breastmilk does not cause diarrhea and vomiting as animal milk sometimes does. Furthermore, breastfeeding prevents pregnancy especially when actively breastfeeding”. When asked why the high knowledge on EBF benefits was not translating to EBF practice, majority of mothers especially those who did not practice EBF gave reasons like getting pregnant and therefore stopping breastfeeding. They indicated that culturally,
breastfeeding during pregnancy is not acceptable and therefore breastfeeding stops when the mother conceives another child.

4.11.1.3 Mother’s Attitudes towards Exclusive Breastfeeding

Majority of the mothers both primiparous and multiparous had positive attitudes towards EBF. However a few were of the contrary. A good proportion of the mothers from both study groups agreed that breast milk is irreplaceable and should be fed on babies as priority. “Breast milk is superior to all other feeds and is a gift from God that all mothers should not forget to utilize,” said a mother. This was unanimously supported by all the mothers. “I believe a mother can exclusively breastfeed her child for six months without any supplement including water. I have done it for the 3rd time now,” a mother said. Some mothers reported to have stood against the odd of cultural practices and influences that coerced them to complement breastfeeding early. A twenty three year old mother who dropped out school at standard eight said, “I had immense pressure from my mum-in-law and my husband to complement breastfeeding as early as the first week of my first child’s with water and cow’s milk. I resisted this having internalized the importance of EBF. Luckily my child grew well with no hospital visits compared to my neighbors who did complement. I had no influence to complement with my subsequent daughter.”

Despite majority of the mothers having good attitude to EBF, some had a negative attitude. For instance, a multiparous mother when asked whether she believed that a baby can survive on breast milk alone without even water for the first six months stated that, “Because of the harsh weather the child needs some water and that some mothers cannot produce enough milk since it runs in their families.” This was confirmed by a number of primiparous mothers. One primaparous said, “On delivery the child needs some water to dilute the colostrum and clear the system.” A mother
with four children stated that, “*Majority of the mothers believe that if a woman breastfeeds while pregnant, her milk will be toxic and can make the baby ill and can even kill.*”

### 4.11.1.4 The Practices of Exclusive Breastfeeding

Majority of the mothers indicated that about half of the women practiced EBF in Wajir County. A number of reasons were given for the County not having achieved higher rates in the practice of EBF. These were cultural reasons based grandmothers’ experience and advice. Such reasons included: child should be given water after delivery to ‘cool’ the gut and dilute colostrum and that mothers should stop breastfeeding once they become pregnant. In addition to that, it was reported that some children refused to breastfeed.

### 4.11.1.5 Factors Encouraging Mothers from Practicing Exclusive Breastfeeding for Six Months

The mothers gave various reasons that encouraged them to breastfeed. These were: the fact the breastfeeding is prescribed in the Holy Quran and failure to breastfeed had spiritual consequences; from mothers who followed at MCH and gave birth at health facility, the healthcare providers counselled and influenced them to breastfeed; some mothers had very supportive husbands who encouraged and supported them to breastfeed; others were influenced by other mothers who exclusively breastfed and had their children grew well and some mothers had knowledge on the importance of EBF and decided to implement themselves.

### 4.11.1.6 Factors Discouraging Mothers from Practicing Exclusive Breastfeeding for Six Months

Sociocultural factors that are deeply rooted in the Somali community played a significant role in encouraging mothers to supplement/complement breastfeeding
early. Majority of the mothers who delivered at home or TBA’s reported to have been influenced to give prelacteals especially cow’s milk and water. In addition, grandmothers and mother-in-law greatly influenced the mothers’ early complementation of breastfeeding.

In a region where majority of the mothers opt to delivered either at home or TBA’s, the primary healthcare institutions (private and public) have not done enough to market or influence mothers to give birth at the health institutions so as to have pregnant mothers counselled early enough on EBF, if anything, the mothers decided to come to the institutions have been demoralized in seeking the required services.

Mothers place of delivery have been shown to influence EBF practices with mothers who delivered at health facilities having higher EBF rates. In Wajir County, the mothers’ utilization of health facilities for deliveries is not satisfactory with various reasons ranging from the influence of grandmothers, unfriendly healthcare staff and inaccessible health facilities. A mother said, “I delivered all my three children at home under the care of an experienced TBA as per my grandmother’s advice. Since this has been the trend and nothing has happened, my daughters and those of my sisters will follow the same.” This sentiment was supported by the majority of the mothers. Mothers who delivered through cesarean section at the health facilities reported to have initiated prelacteals early. A multiparous mother who delivered her two sons in hospital by cesarean sections said that, “In the hospitals after delivery by caesarean section, the nurses will start feeding the child with water and glucose and or powder milk has been added making the child to refuse the breastmilk or refuse breast attachment and this reduces the milk production from the mother.” These sentiments were overwhelmingly supported by majority of the mothers and especially those who delivered through cesarean
section. A primiparous mother who had delivered her a baby in Wajir County hospital and who has been taking the child routinely to MCH clinics had many issues with the healthcare providers. She stated that, “The nurses and clinicians are not friendly and are always in a hurry. If you ask them questions, they get irritated and put you off. If I only had on option of immunizing my child elsewhere with free government vaccines, I would not go to the health facility at all.”

4.11.1.7 Sources and Content of Breastfeeding Information

The mothers reported a number of sources of breastfeeding information. These were: parents (mothers and grandmothers), traditional birth attendants and relatives, health facilities, NGO’s (e.g. Save the Children) and media (TV and radio). A multiparous mother said that, “All my four deliveries were successfully conducted at home by a TBA and she has been advising me on breastfeeding all along. Since she has been doing this for a while, I always take her words as the gospel truth.” Another mother who supported the statement said, “The very young health practitioners (nurses and clinicians) are our own children who we took to school without shoes and clothes, and what new thing can they tell us about infant feeding? This world has gone upside down!” A primiparous mother stated that “EBF is a child’s right and is clearly stated in the whole Quran.”
Table: 4.13a Summary of the Findings on Maternal Knowledge, Attitude and Practices of Exclusive Breastfeeding From Focus Group Discussions

<table>
<thead>
<tr>
<th>Main areas of focus for FGDs</th>
<th>Main and common findings on maternal knowledge, attitude and practices of exclusive breastfeeding</th>
</tr>
</thead>
</table>
| Knowledge on exclusive breastfeeding | - Mothers highly knowledgeable on the duration and benefits of exclusive breastfeeding  
- Mothers know that complementary feeding should start at 6 months  
- Initiate breastfeeding within 1 hour after birth  
- Breast milk is natural food for babies that contains all nutrients  
- Breastmilk is natural, clean and not contaminated  
- EBF Prevents infants from infections such as diarrheal diseases. |
| Sources and content of breastfeeding information | - Sources: Main source is public health facility and TBA’s  
- Others include: family, friends and peers; media and Traditional birth attendants |
| Mothers’ attitude towards EBF | - On the whole, the mothers’ attitudes towards EBF is positive with a few mothers not embracing the practice of EBF |
| Exclusive breastfeeding practices in Wajir County | - EBF practices was average  
- Reasons for not having achieved satisfactory EBF practices: family/friend’s negative influence; mothers getting pregnant while breastfeeding; familial pressure on parents not to exclusively breastfeed |
Table: 4.13b Summary of the Findings on Maternal Knowledge, Attitude and Practices of Exclusive Breastfeeding from Focus Group Discussions

<table>
<thead>
<tr>
<th>Main areas of focus for FGDs</th>
<th>Main and common findings on maternal knowledge, attitude and practices of exclusive breastfeeding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factors influencing the practice of EBF</td>
<td>Factors encouraging the practice of EBF:</td>
</tr>
<tr>
<td></td>
<td>▪ Breastfeeding is a mandatory spiritual calling ordained in the Holy Quran</td>
</tr>
<tr>
<td></td>
<td>▪ Healthcare providers</td>
</tr>
<tr>
<td></td>
<td>▪ Supportive husbands</td>
</tr>
<tr>
<td></td>
<td>▪ Others mothers who did EBF and had experience</td>
</tr>
<tr>
<td></td>
<td>▪ Self-belief</td>
</tr>
<tr>
<td></td>
<td>Factors discouraging the practice of EBF</td>
</tr>
<tr>
<td></td>
<td>▪ Sociocultural influences e.g. TBA’s and grand mum’s influence</td>
</tr>
<tr>
<td></td>
<td>▪ Non–supportive healthcare providers</td>
</tr>
<tr>
<td>Conclusions</td>
<td>The mothers are highly knowledgeable about EBF and most of them have positive attitudes about EBF. However, due to cultural practices and to some extent the negative and unsupportive attitudes from health workers.</td>
</tr>
<tr>
<td></td>
<td>The most common source and valued source of information is the TBAs and friends and relatives</td>
</tr>
</tbody>
</table>

4.12 Findings of Key Informant Interviews (KII’s) on Maternal Knowledge, Attitude and the Practices of Exclusive Breastfeeding

Key Informants that is the head of nurses, clinicians and nutritionists working at Wajir County Hospital MCH clinic were interviewed on KAP and challenges facing mothers on EBF. The interviews were guided by the questions in the KII guide and the findings are presented for all the cadres of the health workers interviewed.
4.12.1 Healthcare Providers’ Knowledge and Attitude on Benefits of Exclusive Breastfeeding

The healthcare providers that took part in the KII were the nurses, clinicians and nutritionists managing clients and patients at the MCH, Wajir County hospital. Overall, they had an excellent understanding on the concept of EBF and its importance to the mother, infant and the society at large. Among the key EBF advantages mentioned were: lactation amenorrhea, reduction of the risks to breast cancer; reduction of risk of postpartum hemorrhage, breast milk has all the nutrients required for child’s growth during the first six months of life, and breast milk contains protective immunoglobulin and reduces childhood morbidity and mortality. Their attitude towards EBF was also positive with two of the nurses reporting to have exclusively breastfed their infants to the recommended 6 months despite being working mothers. “I have exclusively breastfed all my three children despite taking my duties like any other full time employee. I express breastmilk even while working at the clinic and I keeping the breastmilk in the fridge. I have involved my husband on the same and he is now more informed on EBF than me. My mother-in-law tried was against EBF and tried to influence me not to exclusively breastfeed my first child but I stood my ground,” a nurse said. One of clinicians stated, “I am fully involved and motivated in helping my wife to EBF our children and that has given her all the moral and psychological support to practice exclusively breastfeeding. The cases of upper respiratory infections and diarrheal diseases are uncommon among my children. Some family members and neighbors at times ridicule our family by saying I have been bewitched.”
4.12.2 Maternal Knowledge and Attitude on the Benefits of Exclusive Breastfeeding

The clinicians, nurses and the nutritionists all stated that maternal knowledge on EBF is very high but did not always translate into practice. On the same note, the mothers’ attitude towards EBF is on the whole positive but practice is hindered by cultural factors. “The concept of exclusive breastfeeding is quite familiar to all mothers and is even mentioned in the holy Quran. The challenge is implementation and this has to do with family members, TBA’s and relatives,” said a nurse. “The mothers especially the primiparous mothers who were determined to EBF their children are influenced by their grandmothers and friends at home to do otherwise,” said a clinician, who had worked at the health facility for over 7 years.

4.12.3 Status of the Practice of EBF in Wajir County

The practice of EBF in the community is not satisfactory. Water is given to the infants as early as day one. Cultural hindrances, negative attitudes and familial pressure make mothers introduce complementary feeding prematurely, at times even weaning the children from breastfeeding. “Many mothers deliver at home with the help of TBA’s. They introduce prelacteal feeds as early as the first 15 minutes and thereafter complement breastfeeding with other liquids. If asked whether they exclusively breastfeed, over 90% of the mothers will say YES. But this is deceptive and if you dig down to what had transpired from the day of delivery, 50% do not EBF,” said a doctor stationed at the maternity ward.

4.12.4 Sources of Breastfeeding Information in Wajir County

The health workers reported a number of sources of breastfeeding information in Wajir County. These include: immediate family members – mothers and
grandmothers, TBA’s, healthcare providers at MCH/hospitals and clinics, Community health workers and the media both the television and radio. The most common source and valued source of information is the TBAs and friends and relatives followed by MCH/hospitals and clinics.

4.12.5 Challenges Mothers Experience in the Practice of EBF and Factors Influencing the Practices of EBF

Breastfeeding mothers experience a number of challenges in practicing EBF. Information/knowledge gap; many of the mothers receive inaccurate information – from unreliable sources especially from TBA’s and immediate family members. Problems in child positioning and attachment to the breast during breastfeeding and breast health challenges, poor nutrition among nursing mothers and negative influence from family (mother/grandmother)/friends are among the most common challenges experienced by mothers. The healthcare providers’ enumerated a number of factors that discouraged mothers from practicing exclusive breastfeeding for six months. These included: negative influence from TBA’s and family/friends/relatives, lack of support from healthcare providers and early initiation of prelacteals.

4.12.6 Healthcare Providers’ Suggestions on how Exclusive Breastfeeding can be Improved in Wajir County

The following suggestions were made by the clinicians and nurses in improving EBF practices in Wajir County: building skills and capacity of the TBA’s and linking them to the health facilities; improving capacity of health institutions by having well established breastfeeding Centres within the health facilities; increasing the number of nurses and nutritionists in the health facilities; enforcing the BFHI’s
in both the public and private hospitals by the County Government; training and empowering breastfeeding support groups across the Wajir County; training and empowering breastfeeding volunteers selected from among community nurse aids or TBA’s and linking them to the health facilities.

4.12.7 Healthcare Providers’ Efforts to Improve the Practice of EBF in Wajir County

The healthcare providers’ support in improving EBF rates is not satisfactory because of; limited number of healthcare providers against a large number of clients, proximity/distance of health institutions, and minimal support from hospital management in providing the necessary support required for baby friendly initiative and there are no structured community outreach programmes or campaigns to empower mothers. “The clinicians/nurses/nutritionists are not motivated to go an extra mile even while attending to clients especially after the health function has been decentralized,” said a nurse. The nurses mention that the mother to mother support groups have not taken route in Wajir and needs to implemented and monitored/evaluated for the progress.
Table 4.14: Summary of the Key Informant Interviews Findings on Maternal Knowledge, Attitude and Practices of Exclusive Breastfeeding

<table>
<thead>
<tr>
<th>Main areas of focus for KII’s</th>
<th>Main and common findings maternal knowledge, attitude and practices of exclusive breastfeeding</th>
</tr>
</thead>
</table>
| Healthcare providers’ knowledge and attitude on benefits of EBF | • Highly knowledgeable on EBF and breastfeeding as a whole  
• Positive attitudes towards EBF  
• The nurses reported practicing EBF |
| Exclusive breastfeeding practices in Wajir County | • The practice of EBF in the community is not satisfactory  
• Main reasons for inadequate practice are:  
  o Cultural hindrances, negative attitudes and familial pressure to introduce complementary feeding early |
| Mothers’ knowledge and attitude towards EBF | • The clinicians, nurses and the nutritionists were all in agreement that the mothers are highly knowledgeable on EBF. Nonetheless, the knowledge does not always translate into practice.  
• The attitude towards EBF is positive but practice constrained by cultural factors. |
| Sources and content of breastfeeding information | • Sources: Health facility mainly public; Family, friends and peers; Media and Traditional birth attendants |
| Factors discouraging mothers from practicing exclusive breastfeeding for six months | • Negative influence of TBA’s  
• Influence by family/friends and especially grand mothers  
• Lack of adequate support from healthcare providers  
• Some negative cultural factors  
• Lack of support from the fathers/husbands  
• Peer pressure  
• Marketing of breastmilk substitutes |
| Suggestions on how exclusive breastfeeding can be improved in Wajir County | • Building skills and capacity of the TBA’s and linking them to the health facilities.  
• Improving capacity of health institutions  
• Increasing the number of nurses in the health facilities  
• Enforcing the BFHI’s in both the public and private hospitals  
• Training and empowering breastfeeding support groups across the Wajir County  
• Training and empowering breastfeeding volunteers and linking them to the health facilities |
| Conclusions | • The health workers were highly knowledgeable on EBF, had positive attitudes towards EBF and also practices EBF  
• The health workers’ findings on maternal KAP on EBF are in agreement with what the mothers reported in both FGDs and from the quantitative feedings, |
4.13 Factors Associated with Exclusive Breastfeeding Practices Among Multiparous and Primiparous Mothers

To investigate the factors associated with the practice of EBF, mothers were categorized into those who practiced EBF and those who did not irrespective of their parity status.

4.13.1 Maternal Demographic Characteristics and their Association with Exclusive Breastfeeding

The association of exclusive breastfeeding and various maternal socio-demographic factors like age, marital status, education and occupation were investigated. Chi-square test was used to test for significant relationships. The findings showed no significant associations between maternal age and exclusive breastfeeding practices for infants 0-5 months of age (Chi-square test; p= 0.867), maternal marital status and exclusive breastfeeding (Chi-square test; p= 0.832), maternal education level and EBF (Chi-square test; p= 0.249) as well as maternal occupation and EBF (Chi-square test; p=0.636) (Table 5.5).
Table 4.15: Maternal Demographic Characteristics and their Association with Exclusive Breastfeeding for Infants 0-5 Months Old

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>EBF Yes N = 125</th>
<th>EBF No N = 156</th>
<th>Chi-square tests; p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal age:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 18 years</td>
<td>3 (1.1)</td>
<td>3 (1.1)</td>
<td></td>
</tr>
<tr>
<td>18 – 25 years</td>
<td>54 (19.2)</td>
<td>74 (26.3)</td>
<td></td>
</tr>
<tr>
<td>26 – 30 years</td>
<td>42 (14.9)</td>
<td>46 (16.4)</td>
<td></td>
</tr>
<tr>
<td>31 and above</td>
<td>26 (9.3)</td>
<td>33 (11.7)</td>
<td>0.867</td>
</tr>
<tr>
<td>Marital Status:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>108 (38.4)</td>
<td>136 (48.4)</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>3 (1.1)</td>
<td>7 (2.5)</td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>2 (0.7)</td>
<td>2 (0.7)</td>
<td></td>
</tr>
<tr>
<td>Separated</td>
<td>9 (3.2)</td>
<td>8 (2.8)</td>
<td></td>
</tr>
<tr>
<td>Widow</td>
<td>3 (1.1)</td>
<td>3 (1.1)</td>
<td>0.832</td>
</tr>
<tr>
<td>Education:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal</td>
<td>49 (17.4)</td>
<td>75 (26.7)</td>
<td></td>
</tr>
<tr>
<td>Adult Education</td>
<td>6 (2.1)</td>
<td>17 (6.0)</td>
<td></td>
</tr>
<tr>
<td>Primary complete</td>
<td>18 (6.4)</td>
<td>18 (6.4)</td>
<td></td>
</tr>
<tr>
<td>Primary incomplete</td>
<td>8 (2.8)</td>
<td>4 (1.4)</td>
<td></td>
</tr>
<tr>
<td>Secondary Level</td>
<td>20 (7.1)</td>
<td>21 (7.5)</td>
<td></td>
</tr>
<tr>
<td>Certificate level</td>
<td>5 (1.8)</td>
<td>4 (1.4)</td>
<td></td>
</tr>
<tr>
<td>Diploma level</td>
<td>15 (5.3)</td>
<td>14 (5.0)</td>
<td></td>
</tr>
<tr>
<td>Degree level</td>
<td>4 (1.4)</td>
<td>3 (1.1)</td>
<td>0.249</td>
</tr>
<tr>
<td>Occupation:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casual</td>
<td>18 (6.4)</td>
<td>28 (10.0)</td>
<td></td>
</tr>
<tr>
<td>Housewife</td>
<td>83 (29.5)</td>
<td>94 (33.5)</td>
<td></td>
</tr>
<tr>
<td>Formal</td>
<td>19 (6.8)</td>
<td>24 (8.5)</td>
<td></td>
</tr>
<tr>
<td>Self employed</td>
<td>5 (1.8)</td>
<td>10 (3.6)</td>
<td>0.636</td>
</tr>
</tbody>
</table>

Table 4.16: The Influence of Maternal Knowledge on the Practice of EBF

<table>
<thead>
<tr>
<th>Variable</th>
<th>Primiparous</th>
<th>Multiparous</th>
<th>t-test; p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge score</td>
<td>Mean 7.93</td>
<td>Mean 7.49</td>
<td>0.086</td>
</tr>
<tr>
<td></td>
<td>(± 2.10)</td>
<td>(± 2.20)</td>
<td></td>
</tr>
</tbody>
</table>

Significant at p<0.05

On testing the association between maternal knowledge score and the practice of EBF between the group of mothers who did exclusive breastfeeding and those who did not, the findings showed no significant associations between knowledge score.
and exclusive breastfeeding for infants 0-5 months of age (Chi-square test; p=0.933) as shown in Table 5.7.

**Table 4.17: Maternal Knowledge Score and its Relationship with Exclusive Breastfeeding**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>EBF Yes N = 125</th>
<th>EBF No N = 156</th>
<th>Chi-square tests; p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge score:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;3</td>
<td>3(1.1)</td>
<td>8(2.8)</td>
<td></td>
</tr>
<tr>
<td>4-6</td>
<td>30(10.7)</td>
<td>42(14.9)</td>
<td></td>
</tr>
<tr>
<td>&gt;7</td>
<td>92(32.7)</td>
<td>106(37.7)</td>
<td>0.933</td>
</tr>
</tbody>
</table>

**4.13.2 Maternal Attitude Score and its Association with Exclusively Breastfeeding**

The mean attitude score for the primigravidas mothers was 29.46 ± 5.65 and 28.65 ± 6.40 for the multiparous mothers (Table 5.8). There was no significant difference between maternal attitude score and maternal exclusive breastfeeding practices among the primiparous and multiparous mothers (t-test; p=0.262).

**Table 4.18: Maternal Attitude Score and its Association with EBF**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Primiparous</th>
<th>Multiparous</th>
<th>t-test; p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude score</td>
<td>Mean 29.46</td>
<td>Mean 28.65</td>
<td>(± 5.650)</td>
</tr>
<tr>
<td></td>
<td>(± 6.402)</td>
<td>(± 6.402)</td>
<td>0.262</td>
</tr>
</tbody>
</table>

On testing for the association between maternal attitude score and the practice of EBF those mothers who practices exclusive breastfeeding and those who did not, the findings showed significant associations between maternal attitude and exclusive breastfeeding for infants 0-5 months of age (Chi-square test; p= <0.05)(Table 5.9).
Table 4.19: Maternal Attitude and its Association with Exclusive Breastfeeding

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>EBF Yes N = 125</th>
<th>EBF No N = 156</th>
<th>Chi-square tests; p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;20 poor (&lt;49%):</td>
<td>5(1.8)</td>
<td>8(2.8)</td>
<td></td>
</tr>
<tr>
<td>21-30 (50-74%):</td>
<td>47(16.7)</td>
<td>101(35.9)</td>
<td></td>
</tr>
<tr>
<td>&gt;31(&gt;75%):</td>
<td>73(26.0)</td>
<td>47(16.7)</td>
<td>0.001</td>
</tr>
</tbody>
</table>

4.13.3 Maternal Type and of Delivery Characteristics and Association with Exclusive Breastfeeding

Infants born at health facility were more likely to exclusively breast fed than those born at TBA’s house or home though this was not significant (OR=0.457; p>0.05).

Mothers who gave birth through normal vaginal delivery were more likely to exclusively breastfeed and there was significant between EBF and maternal type of delivery (OR=1.239; p=0.008) (Table 6.0).

Table 4.20: Maternal Type and of Delivery Characteristics and Exclusive Breastfeeding

<table>
<thead>
<tr>
<th>Maternal characteristics</th>
<th>delivery</th>
<th>Exclusively Breast fed (N=125)</th>
<th>Not Exclusively Breast fed (N=156)</th>
<th>ODDS RATIO (OR)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place of Delivery</td>
<td>Health facility</td>
<td>93 (66.4)</td>
<td>74 (47.4)</td>
<td>0.457</td>
<td>0.830</td>
</tr>
<tr>
<td></td>
<td>Home/TBA house</td>
<td>32 (33.6)</td>
<td>82 (52.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of delivery</td>
<td>Normal</td>
<td>92 (73.6)</td>
<td>104 (66.7)</td>
<td>1.239</td>
<td>0.008*</td>
</tr>
<tr>
<td></td>
<td>Caesarean</td>
<td>33 (26.4)</td>
<td>52 (33.3)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Significant at p<0.05
4.13.4 Infant Morbidity and Exclusive Breastfeeding

The infants who were not sick were more likely to exclusively breastfeed compared to those who were sick and there was significant relationship between infants’ morbidity and EBF (OR=3.1; p<0.0001) (Table 6.1).

Table 4.21: Relationship Between Infant Morbidity and EBF

<table>
<thead>
<tr>
<th>Sick infants</th>
<th>Exclusively breastfed</th>
<th>Not exclusively breastfed</th>
<th>ODDS RATIO (OR; 95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>32</td>
<td>80</td>
<td>3.1</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>No</td>
<td>93</td>
<td>76</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant association: p<0.05
CHAPTER FIVE: DISCUSSIONS

5.1 Introduction

This was a cross sectional study aimed at establishing the knowledge, attitudes and practices of EBF between primiparous and multiparous mothers among infants 0<6 months old in Wajir County hospital, Wajir County. In addition, the study aimed to establish the factors associated with the practice of EBF. Quantitative data was collected using researcher-administered questionnaires while qualitative data were collected through key informant interview and focus group discussions.

A search through the available literature showed that no studies comparing the knowledge, attitude and practice of primiparous and multiparous mothers on exclusive breastfeeding.

5.2 Maternal Knowledge on Exclusive Breastfeeding

Knowledge is a pre-requisite of EBF practice and therefore the assumption is that high maternal knowledge on EBF should translate into practice. Overall, the mothers’ knowledge on breastfeeding was high with primiparous having higher knowledge on most aspects of breastfeeding than the multiparous mothers despite the fact that the differences were insignificant. The high knowledge among the mothers could be attributed to key government interventions promoting EBF at the National, health facility and community level. One of the key priority areas in the Kenya National Nutrition Action Plan 2012-2017 is to improve the nutritional status of children under 5 years of age. One of the strategies to do this is to promote exclusive breastfeeding for the first six months of baby’s life though baby Friendly
Hospital Initiative (BFHI) and more recently Baby Friendly Community Initiative (BFCI); and Mother-to-Mother Support groups.

Although it may be assumed that the primiparous mothers being younger in age would be more knowledgeable than the multiparous on the recommended practices based on scientific evidence, this was only true for only one aspect of knowledge. Younger mothers are strongly influenced by their partners, mothers and peers and they rely upon them for breastfeeding information and support (Noble-Carr & Bell, 2012).

In addition, the mothers demonstrated high knowledge during the FGD with most of them demonstrating good understanding on the importance of exclusive breastfeeding. The Somali community has a strong bond in regards to their cultural practices and the effect of this on EBF practices cannot be overemphasized. With the fact that majority of the mothers (from both groups) delivering at TBA’s or at home, infants are being introduced to prelacteals in accordance with the TBA’s advice and it is therefore logically not plausible that the level of knowledge will significantly differ between the two groups. The role parents, TBA’s and grandparents play in the practice of EBF in this community cannot be overemphasized as demonstrated in the FGD discussion. “I delivered all my three children at home under the care of an experienced TBA as per my grandmother’s advice. Since this has been the trend and nothing had happened, my daughters and those of my grand-daughters will follow the same,” said a mother. Similar findings were also found in Brazil where grandmothers, especially the maternal ones, may negatively influence the duration of EBF (Dias de Oliveira et al., 2014).
The high maternal knowledge did not necessarily translate into EBF practices implying that factors other than knowledge influence EBF practice in this study population. The high knowledge on EBF is masked by the strong cultural sense and practices propagated by the TBA’s, grandmothers, mother-in-law and family members. Similar findings have been reported in other studies conducted in informal settlements in Nairobi Kenya (Ochola, 2008) and South East Nigeria (Onah et al., 2014). Conversely, in Tanzania, mothers’ knowledge on EBF influenced the practice of EBF; the higher the knowledge on EBF among women, the higher was the prevalence of EBF (Nkala et al., 2011).

5.2.2 Sources of Information on EBF

A greater portion of mothers in both groups received breastfeeding information from TBA’s and family/friends/relatives compared to those who receive breastfeeding information from health facilities. A significantly higher proportion of primiparous compared to multiparous mothers received the breastfeeding information TBA’s. In this study population, the health facility was not a major source of information on infant feeding practices for the majority of the women. This may be explained by the fact that the majority of the mothers did not deliver at the health facilities and the fact majority of the mothers mentioned to have received breastfeeding information from TBA’s, family, friends and relatives. The fact that the health facilities are not easily accessible to some mothers as mentioned in the FGD’s may have also contributed. In Kenya, some studies demonstrate that mothers are positively influenced by the information they receive from healthcare providers during antenatal visits to healthcare facilities (Ochola, 2008). The converse is true in other settings, for example in rural Egypt, mothers giving birth at home were five times
more likely to exclusively breastfeed than those who delivered in hospitals (Al Ghwass, & Ahmed, 2011). Given that the majority of the women in this study delivered at home, the information received, especially from TBA’s, friends and relatives might not be scientific and therefore may have immensely contributed to the relatively low EBF rates in the community. There were no differences in the source and the content of breastfeeding information between primiparous and multiparous mothers.

5.2.3 Maternal Attitude on Exclusive Breastfeeding

Maternal positive attitude towards EBF is necessary for the practice and therefore the assumption is that positive maternal knowledge on EBF should translate into practice. Overall, maternal attitude towards exclusive breastfeeding was positive with no significant differences between the two groups of mothers. Positive maternal attitude was associated with EBF. Just like the reasons for the high knowledge among the mothers, it is also assumed the government strategy and interventions in improving IYCF and especially EBF could have led to the positive attitude among the mothers towards EBF. Strong cultural factors like parents influence on early introduction of prelacteals and post-lacteals have hindered EBF practices despite positive maternal attitude towards EBF.

Some of the negative attitudes expressed by some mothers were embedded in cultural beliefs and practices. A multiparous mother highlighted that, “If a woman breastfeeds while pregnant, her milk is toxic and can make the baby ill and even kill the infant.” The study showed that some of young mothers who deliver at home or assisted by TBA’s ultimately follow the footsteps of their mothers and grandmothers in infant feeding practices. “I delivered all my three children at home under the care
of an experienced TBA. Since this has been the trend since our forefather’s time, my daughters and those of my granddaughters will follow the same.” stated a multiparous mother. Another mother stated that, “Because of the harsh weather the child needs some water and that some mothers cannot produce enough milk since it runs in their families.” These findings are consistent with the findings from other studies that young mothers’ attitudes and practices in infant feeding is influenced by older women in their communities and those attitudes/perceptions and practices are based on cultural models in place (Hackett, Mukta, Jalal, & Sellen, 2012). Cultural attitudes, beliefs and norms are important factors in the WHO’s model of the determinants of infant and child feeding behavior (WHO Global Strategy for IYCF, 2003) as they are known to affect the breastfeeding practices. Other researchers have identified detrimental cultural beliefs (insufficient milk and “bad” colostrum) as a hindrance to the practice of EBF (Osman et al, 2009).

5.2.4 Prevalence of Exclusive Breastfeeding

The promotion and support of exclusive breastfeeding is a global priority because of the health, growth and developmental benefits it confers to children and society in general (Black et al., 2008; The World Bank, 2006). Despite the improvement in the rates of exclusive breastfeeding in Kenya, the rates are still below the WHO 90% recommended acceptable rate. In Kenya, the rate of exclusive breastfeeding has recently increased from 32% (Kenya National Bureau of Statistics [KNBS] and ICF macro, 2010) to 61% (Kenya National Bureau of Statistics [KNBS] and ICF macro, 2014). In East Africa, the EBF rates are quite impressive with Rwanda (84.90%), Burundi (69.3%), Uganda (63.2%), Kenya (61%) and Tanzania (50%) all having
more than half of the infants 0-5 months exclusively breastfed (http://apps.who.int/gho/data/node.main.1100?lang=en; accessed 11th May 2015).

Disaggregated by regions, low rates of EBF have been reported in Kenya; in the informal settlement in Nairobi, EBF for the first six months was rare as only about 2% of infants were exclusively breastfed for six months (Kimani-Murage et al., 2011). In Nyando District Kisumu County, Kenya, the prevalence was low at 35% (Ogada, 2014).

Overall, the EBF rate in the current study was 45.5%; with the primiparous women having a rate of 39.4% and multiparous 49.3%. This difference was however not significant. The EBF rate observed in this study was much lower than the Kenya national rate. The EBF rate in this current study may be lower than the national rate because it was reported that cultural factors regarding infant feeding practices were paramount in the community. There was no literature accessed comparing the EBF rates among primiparous and multiparous mothers.

Many factors were reported to influence the practice of EBF during the FGDs. Lack of milk, traditional beliefs and personal choice of not wanting to breastfed were cited as reasons for mothers not breastfeeding their infants. A mother reported, “Exclusive breast feeding was not common due to cultural reasons like grandmothers advice against the practice, family pressure especially to give the child water to ‘cool’ the gut and dilute the colostrum.”

The practice of EBF in the community is described as unsatisfactory by both the healthcare practitioners and the mothers with cultural beliefs playing a significant role in influencing the practice(s). “Many mothers deliver at home with the help of
TBA’s. They happen to introduce prelacteal feeds as early as the first 15 minutes and thereafter complement breastfeeding with other foods. If asked whether they exclusively breastfeed, over 90% of the mothers will say yes. But this is deceptive and if you dig down to what had transpired from delivery day, over 50% don’t EBF,” said a doctor at the maternity ward.

Despite majority of the mothers in this study initiating breastfeeding within the first hour of life, early introduction of prelacteals like water, water with sugar and powdered milk was prevalent in the community. In Kenya, the practice of pre-lacteal feeding is common. About one-third (35%) of infants in Kenya are exclusively breastfed for the first 4-6 months of life, and complementary feeding practices are frequently ill timed, inappropriate and unsafe (UNICEF, 2008). It is clear that cultural factors in the community hinder the practice of EBF in Wajir County.

5.2.5 Factors Associated with Exclusive Breastfeeding

The findings of the study showed no significant associations between maternal socio-economic, demographic factors and exclusive breastfeeding practices for infants 0-5 months of age. The findings of this study are consistent with those of a prospective cohort study conducted in India in 2007 where demographic characteristics were not associated with exclusive breastfeeding (Chudasama et al., 2009). Similar findings were found in Canada where socio-demographic or contextual factors were found to have limited influence on breastfeeding (Sonia et al., 2008). Other studies conducted in informal settlements in Nairobi have found similar findings where no association was found between maternal demographic factors and breastfeeding (Kimani-Murage et al., 2011; Ochola, 2008). The current study showed that infants’ age and morbidity as well as maternal morbidity and
breastfeeding complications had significant associations with exclusive breastfeeding. These findings are similar to those of other studies where maternal complications/difficulties and especially breast related conditions (morbidity) result in a negative experience with breastfeeding which is followed by a decrease in mothers’ confidence to breastfeed thus causing early cessation of breastfeeding (Waldenström et al., 2004; Ochola; 2008; Motee et al., 2013). In agreement with the findings of this study, maternal illness was positively associated with early termination of breastfeeding (Sachdev & Mehrotra, 1995).

In addition, the findings showed no significant associations between maternal knowledge and exclusive breastfeeding for infants 0-5 months of age. This can be attributed to the cultural reasons that hinder the practice among the community members. There was, however a significant association between maternal attitudes score and EBF. Conversely, There was high a relationship between maternal knowledge of EBF with appropriate breastfeeding practices where mothers who had no knowledge of optimal breast feeding were 90% less exclusive breastfeeding (AOR=0.10(0.03, 0.371)) and 94% less ever breasted (AOR=0.06(0.01, 0.65) compared to their counterparts (Tamiru & Mohammed, 2013).

There was significant association between maternal type of delivery and EBF with mothers who gave birth through normal vaginal delivery more likely to exclusively breastfeed compared to those who gave birth through cesarean section. Similarly, cesarean section delivery was identified as a significant risk factor for earlier cessation of exclusive breastfeeding (Pandey et al., 2010; et, al., 2008; Khassawneh et al., 2006) and this is mainly because of the potential consequences of cesarean
delivery including post-birth mother-infant separation; post-surgical pain and longer postpartum recovery may pose greater challenge to the initiation of EBF among first-time mothers, in particular (Sonia et al., 2008).

The uptake of EBF among the mothers who delivered through caesarean section is low. A mother stated, “Hospitals after Caesarean section delivery will start feeding the child with water with glucose and or powder milk making the child to refuse the breastmilk or refuse breast attachment and this reduces the milk production from the mother.” There is a wealth of evidence suggesting cesarean sections are detrimental to breastfeeding (Prior et al., 2012). There was however no significant differences in maternal socioeconomic and demographics as well as maternal type of delivery between primiparous and multiparous mothers. There was also significant association between infants’ morbidity and EBF practice with infants who were not sick more likely to exclusively breastfeed compared to those who were sick.
CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Summary of the Findings
This study was a cross sectional study aimed at establishing the knowledge, attitudes and practices between primiparous and multiparous mothers among infants 0-5 months old in Wajir County hospital, Wajir County.

Both groups of mothers exhibited high knowledge on EBF with no significant differences between them. This knowledge however, did not necessarily translate into practice. The main source(s) of breastfeeding information for both the primiparous and multiparous mothers was from TBA’s and family/friends/relatives followed health facilities.

The prevalence of EBF (44.5%) was not only lower than the National level of 61% (KDHS, 2014) but way below the universal target of 90%. There was no significant difference in the prevalence of EBF among the primiparous and the multiparous. The low EBF rate could also be attributed to the large number of mothers (over 50%) getting breastfeeding information from TBAs and family/friends/relatives compared to 38% receiving breastfeeding information from a health facility. The TBAs are most likely to be propagating the cultural practices rather than the recommended practices based on scientific evidence.

The mother’s attitude towards exclusive breastfeeding was positive, and influenced EBF to a certain extent. Despite mothers having positive attitude and high level of knowledge towards exclusive breastfeeding, the practice of exclusive breastfeeding
was low and majorly hindered by social-cultural issues that is deeply rooted in the community.

In this study population, maternal socioeconomic, demographic, and maternal knowledge did not influence exclusive breast feeding. Maternal type of delivery, maternal attitude towards EBF and infant morbidity were significantly associated with EBF; with infants who were not sick more likely to exclusively breastfeed compared to those who were sick and mothers who delivered through cesarean section less likely to exclusively compared to those delivered through normal vaginal delivery. The hypotheses that there is no significant difference in knowledge between primiparous and multiparous women; that there is no significant difference in attitudes between primiparous and multiparous mothers and that there was no significant difference in the practice of EBF between primiparous and multiparous mothers were not rejected.

6.2 Conclusions

- The mothers’ knowledge on breastfeeding was high as demonstrated by the information from the interviews and the FGDs. Primiparous mothers’ demonstrated higher knowledge in most aspects of breastfeeding than the multiparous, however the differences were insignificant. The high maternal knowledge did not necessarily translate into EBF practices because cultural factors were paramount in influencing infant feeding practices in this study population.

- Overall, the attitude towards EBF among the primiparous and multiparous mothers was positive with no significant difference between the two groups.
Similar to the case of knowledge, maternal positive attitudes towards EBF did not necessarily translate into the practice of EBF because of the strong cultural norms that are prevalent in the community.

- The major sources of information on breastfeeding for both the primiparous and multiparous mothers were the Health Facilities and the TBAs with no significant difference between the two groups of women.

- The exclusive breastfeeding rate in Wajir County falls way below the WHO recommendation of 90% and the national level rate of 61%. The highest rates of exclusive breastfeeding were observed up to 3 months then they declined sharply to very low rates by 6 months. There was no significant difference in the practice of EBF between the primiparous and multiparous mothers.

- Factors associated with EBF in the study population were; maternal type of delivery (normal vaginal or caesarian section), infant morbidity and maternal breast health complications were significantly associated with EBF. There were no associations between maternal socioeconomic, demographic and maternal knowledge and exclusive breast feeding.

6.3 Recommendations

6.3.1 Recommendations for Programming

a) Prioritizing, designing and strengthening community health strategies and interventions to improve BF practices by the Ministry of Health and Non-governmental organizations working on child health in Wajir County. The suggested strategies include:-
- Strengthening the Community Health Strategy by training of TBAs and Community all stakeholders to include Ministry of Health and NGOs involved in child survival activities in order for them to discard the cultural practices that is currently largely influencing the feeding practices. In addition, strategies should be put in place to improve the coverage of the mother to mother breastfeeding support groups. These strategies are likely to positively influence the uptake of EBF because they directly target the stake holders in infant feeding practices.

b) Maximize on opportunities of integrating breastfeeding campaigns with other community based interventions like community based management of severe acute malnutrition, community based malnutrition screening programmes, child health programmes like growth monitoring and promotion, social protection programmes and food security programmes. These should be done by all the stakeholders; Ministry of Health, NGOs and others.

c) Greater emphasis should be made to improve the attitude and skills of the health care workers and the services rendered in the health facilities in an effort to attract mothers to seek antenatal services and subsequently deliver at the health facilities. This should be done by the Ministry of Health.

d) Communication for behavior and social change should be propagated in multiple communication channels acceptable and accessible to the community e.g. on Radio and Television.
6.3.2 Recommendations for Further Research

Further research is necessary to:

a) Identify the existing beliefs and socio-cultural factors that negatively impact on the EBF practices in the County and to identify in a participatory manner acceptable local solutions that could be used to increase EBF.

b) Investigate how the role of the TBA’s can be strengthened or re-strategized to improve the practice of exclusive breastfeeding in the study population.
REFERENCES


APPENDICES

APPENDIX A: CONSENT FORM

Serial No.____________

INTRODUCTION

“My name is Mahat J. Mohammed, a student from Kenyatta University, Department of Foods, Nutrition and Dietetics. I am carrying out a stud on, “Knowledge, Attitudes and Practice (KAP) on Exclusive Breastfeeding (EBF) among first time and multiparous mothers in Wajir East, Wajir County, Kenya” . The information will be used by the relevant stakeholders like the Ministry of Medical Health to improve Infant and Young Child Nutrition in Wajir County as well as in other regions of Kenya. The study will not expose you to any risk whatsoever.

“To help this study, I would like to ask you some questions which may take about ____ minuets. As your participation is very important to the outcome of the study I kindly request you to give us your sincere, honest and truthful answers on voluntarily basis. All your words are fully confidential and you need not mention your name.”

I hereby certify that I have been fully informed of the nature of this study and I hereby give my consent to offer any information which is required of me without any coercion or force.

Signature of Respondent: __________________  Date: ____________________

Signature of Researcher: _________________  Date: ______________________
Tixraac 1b: Foomka Ogolaanshaha
Lambarka Taxanaha.________

HORDHAC
“Magacaygu waa Mahat J. Mohammed, waxaan ahay arday ka socda Jaamacadda Kenyatta (Kenyatta University), Qaybta Cunada, Nafaqada iyo Cuno-qaadashada. Waxaan baaritaan ku samaynayaa, ‘‘Aqoonta, Dabeecadaha iyo Dhaqanka (KAP) ku saabsan Naasnuujta la Kaliyel (EBF) ee ay leeyahin hoooyooyinka cusub ama kuwa horay u dhalay, ee ku nool Bariga Wajir, Wajir Kowti, Kenya’’.

Waxbixinta waxaa isticmaali doona kuwa u baahan sida Wasaaradda Caafimaadka si ay u horumariso Nafaqada Ilmaha iyo Caruurta ku nool Wajir Kownti, iyo sidoo kale gobalo kale oo Kenya ku yaal.

OGOLAANSHOWA LA OGAYSIIYAY
Hooyada la doortay akhri qoraalka soo socda
“Si aan baaritaankan u caawiyi, waxaan jeelaan lahaa in aan ku waydiyo su’aalo qaadan kara ____ daqiiqo. Maadaama ka qaybqaadashadaadu ay muhiim u tahay natiijada baaritaanka ka soo baxaysa, waxaan kaa codsan lahayn in aad jawaabo daacad ah oo run ah aad u bixiso si istiqyaarkaaga ah. Erayadaada oo dhan waa qarsoodi, magacaagana lama sheegi doono.Waxaan halkan ku cadaynayaa in si buuxda ujeedada baaritaankan la iiga wargaliyay; waxaana halkan ku bixinayaa ogolaanshahayga, si aan u dhiibo waxii warbixin ah oo la iiga baahan yahay, ayada oo aan la igu qasbin, oo aan xoog la ii adeegsan.

Saxiixa Jawaabaha: ___________________ Taariikhda: ___________________

Saxiixa Baaraha: ________________ Taariikhda: ___________________
APPENDIX B: ASSENT FOR UNDER 18 YEARS

The above information regarding my participation in the study is clear to me. I have been given a chance to ask questions and my questions have been answered to my satisfaction. My participation in this study is entirely voluntary. I understand that my records will be kept private and that I can leave the study at any time. I understand that I will still get the same care and advise from the health facility whether I decide to leave the study or not and my decision will not change the care I will receive from the clinic today or that I will get from any other clinic at any other time.

Name of underage …………………………………………………………………

___________________________ __________________________
Signature or Thumbprint    Date
Tixraaca 2 b: Ogolaanshaha 18 sano ka yar

Warbixinta kore ee ka qaybqaadashadayda baaritaankan ka hadlaysta waa ii cadahay. Waxaa fursad la ii siiyay in aan su’alo waydiyo, su’aalahaygiina si aan ku qanco ayaa looga jawaabay. Ka qaybqaadashadayda baaritaanka dhamaanteed waa istiqyaar. Waxaan fahmayaa in warbixintaydu ay ahaan doonto mid si kali ah loo qaado, oo aan ka bixi karo baaritaanka waqti walba. Waxaan ogahay in aan helidoono daryeel isku mid ah, hadii aan ka baxo baaritaanka iyo hadii kale; go’aankayguna in aanu saamayn ku yeelan doonin daryeelka aan kilinigga ka helayo maanta; ama daryeelka aan ka heli doono kilinig kale waqti walba oo kale.

Magaca da’yarta ……………………………………………………………………………………………

_______________________  _______________
Saxiix ama Suul saar  Taariikh
APPENDIX C: LETTERS OF PERMISSION

Mahat J. Mohammed,
C/o Kenyatta University,
Dept. of Foods, Nutrition & Dietetics
P. O. Box 43844 – 00100,
Nairobi, Kenya.

Medical Superintendent
Wajir District Hospital
Wajir

Dear Sir/Madam,

RE: AUTHORITY TO CARRY OUT A RESEARCH STUDY IN WAJIR DISTRICT HOSPITAL

I am a student pursuing MSc. Food, Nutrition and Dietetics in Kenyatta University. As part of my studies, I am required to carry out a community-based research. I have received authority to conduct my research titled, “Knowledge, Attitudes and Practice (KAP) on Exclusive Breastfeeding (EBF) among first time and multiparous mothers in Wajir East, Wajir County, Kenya” from Kenyatta University. In addition I have obtained ethical approval from the Kenyatta University Ethical Review Committee and a research permit from the National Commission for Science, Technology and Innovation.

I am kindly requesting to be allowed to carry out the research in your facility.

Thank You.

Yours Sincerely,

Mahat J. Mohammed
## APPENDIX D: BUDGET FOR THE STUDY

<table>
<thead>
<tr>
<th></th>
<th>Budget Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposal writing</td>
<td>Stationery</td>
<td>10,000</td>
</tr>
<tr>
<td></td>
<td>Photocopy</td>
<td>2000</td>
</tr>
<tr>
<td></td>
<td>Printing</td>
<td>6000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data collection</td>
<td>Transport</td>
<td>10,000</td>
</tr>
<tr>
<td></td>
<td>Lunch</td>
<td>10,000</td>
</tr>
<tr>
<td></td>
<td>Photocopy</td>
<td>15,000</td>
</tr>
<tr>
<td></td>
<td>Research assistants (3)</td>
<td>60,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data analysis</td>
<td>Statistician</td>
<td>30,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Report writing</td>
<td>Photocopy and printing</td>
<td>5000</td>
</tr>
<tr>
<td></td>
<td>Binding</td>
<td>7000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sub total</td>
<td></td>
<td>155,000</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>10% of the sub total</td>
<td>15,500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>170,500</td>
</tr>
</tbody>
</table>

### Notes
- Stationery includes notepads, pens, and other writing materials.
- Photocopy includes costs for copying documents.
- Printing includes costs for printing reports and theses.
- Transport includes costs for travel and field visits.
- Lunch includes costs for meals.
- Research assistants (3) includes salaries for three research assistants.
- Statistician includes costs for statistical analysis.
- Photocopy and printing includes costs for copying and printing reports.
- Binding includes costs for binding reports and theses.
- Miscellaneous includes costs for unforeseen expenses.
## APPENDIX E: WORK PLAN FOR THE STUDY

<table>
<thead>
<tr>
<th>Activities</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presentation of concept paper</td>
<td>May, 2013</td>
</tr>
<tr>
<td>Proposal development</td>
<td>June – September 2013</td>
</tr>
<tr>
<td>Defending Proposal at the department</td>
<td>December 2013</td>
</tr>
<tr>
<td>Proposal presentation at the School</td>
<td>December 2013</td>
</tr>
<tr>
<td>Submission of proposal to Graduate School</td>
<td>January 2014</td>
</tr>
<tr>
<td>Submission to proposal for Ethical review</td>
<td>March 2014</td>
</tr>
<tr>
<td>Application for research permit from NACOSTI</td>
<td>May 2014</td>
</tr>
<tr>
<td>Preparation for field work</td>
<td>June 2014</td>
</tr>
<tr>
<td>Pretesting of research instruments</td>
<td>June 2014</td>
</tr>
<tr>
<td>Data collection</td>
<td>June - July 2014</td>
</tr>
<tr>
<td>Data entry and analysis</td>
<td>August- December 2014</td>
</tr>
<tr>
<td>Writing Thesis</td>
<td>January 2015-August 2015</td>
</tr>
<tr>
<td>Presentation of the findings &amp; review of thesis</td>
<td>December 2015</td>
</tr>
<tr>
<td>Thesis defense</td>
<td>January 2016</td>
</tr>
<tr>
<td>Review of thesis</td>
<td>February 2015</td>
</tr>
<tr>
<td>Graduation</td>
<td>July 2016</td>
</tr>
</tbody>
</table>
APPENDIX F: QUESTIONNAIRE

Questionnaire for the interview schedule

COMPARISON OF KNOWLEDGE, ATTITUDES AND PRACTICES ON EXCLUSIVE BREASTFEEDING BETWEEN PRIMIPAROUS AND MULTIPAROUS MOTHERS ATTENDING WAJIR DISTRICT HOSPITAL, WAJIR COUNTY, KENYA

INSTRUCTIONS

Please put a dash (-) in the boxes representing the most appropriate response. Comment should be made in appropriate spaces provided.

ADMINISTRATIVE DETAILS

Questionnaires ID NO………………… Village name………………………………………………

Name of the interviewer……………… Name of Respondent……………………

Date of interview………………………………………………………………………

Questionnaire checked………………………………………………………………
SECTION A: BABY’S BIODATA

A1. Child’s ID NO……………………………  A2. Name of baby……………………

A3. Sex: 1- Male [ ] 2- Female [ ]

A4. Date of birth…………………  A5. Age of baby in months…………………

SECTION B: DEMOGRAPHIC CHARACTERISTICS OF THE HOUSEHOLDS

B1. Age of mother in completed years………………………………………………

B2. Marital status

1- Married [ ] 4- Divorced [ ]

2- Single [ ] 5- Separated [ ]

6- Widow [ ]

B3. Level of education

1- No formal education [ ] 5- Secondary level education [ ]

2- Adult education only [ ] 6- Certificate level training [ ]

3- Completed primary [ ] 7- Diploma level education [ ]

4- Not completed primary [ ] 8- Degree level education [ ]

B4. What is your occupation?

1- Casual worker [ ]

2- Housewife [ ]

3- Formal/regular job (specify type of job)…………………………………………

4- Self-employed (specify)…………………………………………………………….
B5. If married,

What is your husband’s occupation?

1- Casual worker [ ]

2- Formal/regular job (specify type of job)………………………………………………

3- Self-employed (specify)……………………………………………………………………

SECTION C: SOCIO-ECONOMIC CHARACTERISTICS OF THE HOUSEHOLDS

C1. What are your sources of income?

1- Salaried job [ ] 2- Husband [ ]

3- Own business [ ]

4- Other (specify) ……………………………………………………………………………

C2. Do you live in a:

1- Rented house [ ] 2- Owned house [ ]

3- Manyatta [ ] 3- other informal settlement [ ]

C3. What is the number of rooms in the house? ………………………………………rooms.

C4. If rented, how much rent do you pay per month? Ksh…………………………

C5. Evaluation of the type of living conditions:

Wall made of:

1- Iron sheets [ ] 4- Burnt bricks [ ]

2- Mud and wooden poles [ ] 5- mud and cement [ ]

3- Cement/stone blocks [ ] 6- timber [ ]

7- wooden twigs [ ]

8- Other (specify)…………………………………………………………………………
Roof made of;  
1- Iron sheets [ ]  
2- Tiles [ ]  
3- Grass thatched [ ]  
4- (Other specify) ........................................................................

Floor made of;  
1- Earthen [ ]  
2- Cement [ ]  
3- Other (Specify) ........................................................................

C6. What is your main source of lighting?  
1- Kerosene [ ]  
2- Electricity [ ]  
3- Candle [ ]  
4- Solar [ ]  
5- Other (Specify) ........................................................................

C7. What is your main source of cooking fuel?  
1- Firewood [ ]  
2- Charcoal [ ]  
3- Kerosene [ ]  
4- Gas [ ]  
5- Electricity [ ]  
6- Other (specify) ........................................................................
C8. Do you possess the following items?

1. Radio [ ]
2. Bicycle [ ]
3. Television [ ]
4. Video/VCD/DVD [ ]
5. Phone [ ]
6. Motorcycle [ ]
7. Car/truck [ ]
8. Oxen/donkey cart [ ]
9. Land [ ] (how many acres?) …………………

C9. Do you own livestock?

1. Cows [ ] (how many?) ………………………
2. Goats [ ] (how many?)…………………………
3. Sheep [ ] (how many?)…………………………
4. Chicken [ ] (how many?)………………………
5. Camel [ ] (how many?)…………………………
6. Other [ ] (specify)……………………………

SECTION D: INFANT FEEDING INFORMATION AND PRACTICES

D1. Where was the [NAME] child born?

1. Home [ ]
2. Health facility [ ]
3. At a TBA’s house [ ]

D2. What kind of delivery?

1. Normal [ ]
2. Cesarean [ ]
3. Elective cesarean [ ]
D3. Did you ever breastfeed (name)?
   1= Yes [ ]  2= No [ ]  3= Don’t Know [ ]
   If No, go to E4
   If yes, go to E5

D4. If No, why
   1= No milk [ ]  2= Did not want to breast feed [ ]
   3= Traditional beliefs (child will die) [ ]  4= Other [ ]

D5. If yes, How soon after birth did you put [Name] on the breast?
   If less than an hour record 00 [ ]
   If less than 24 hours record number of Hours [ ]
   If more than 24 hours record number of Days [ ]
   If mother does not know, record: 88 [ ]

D6. During the first 3 days after delivery, did you give [Name] the fluid/liquid that came from your breasts?
   1= Yes [ ]
   2= No [ ]
   3= Don’t Know [ ]

D7. In the first 3 days after delivery, was [Name] given anything to drink other than breast milk?
   1= Plain water [ ]
   2= Sugar water or glucose water [ ]
   3= Powdered milk or fresh milk [ ]
   4= Infant formula (e.g. Nan) [ ]
   5= Gripe water [ ]
6= Not given

7= Others (specify)…………………………………………………………………….

D8. Are you still breastfeeding [Name]?
1= Yes [ ]
2= No [ ]

D9. Now, I will ask you about what [Name] ate and drank yesterday during the day and the night.

During the day and the night, did [Name] receive any of the following fluids?

(Kindly probe the mother for responses and record the codes/responses in their appropriate category)

i. Breast milk
   Only one answer coded as below:
   1. Yes [ ]
   2. No [ ]
   3. Don’t Know [ ]

ii. Infant formula
   1. Yes [ ]
   2. No [ ]
   3. Don’t Know [ ]

iii. Other milks: animal milk, reconstituted powdered milk, (Halwa, Hayat, Coast), Sour milk.
   1. Yes [ ]
   2. No [ ]
   3. Don’t Know [ ]

iv. Sweetened flavored juices (Zeitun, Mushakil, vimto, Ananas, savannah,) Soda
   1. Yes [ ]
   2. No [ ]
   3. Don’t Know [ ]
Tea/Coffee
1. Yes [ ]
2. No [ ]
3. Don’t Know [ ]

Plain water
1. Yes [ ]
2. No [ ]
3. Don’t Know [ ]

Thin porridge
1. Yes [ ]
2. No [ ]
3. Don’t Know [ ]

SECTION E: INFANT AND MATERNAL HEALTH

E1. Has the baby been unwell in the last two weeks?
1- Yes [ ]  2- No [ ]
If YES, go to question E2 to E8
If NO, skip E2 to E8 and go to question E9

E2. If yes, what condition was the baby suffering from?
1- Vomiting [ ]  4- Common cold/ flu [ ]
2- Diarrhea [ ]  5- Cough [ ]
3- Fever [ ]  6- Malaria [ ]
7- Any other (specify)…………………………………………………………………………………..

E3. Did you seek medical care for the baby?
1- YES [ ]  2- NO [ ]

E4. If NO, why did you not seek medical assistance?
…………………………………………………………………………………………………………………………………………...
E5. If yes where did you seek the medical care?

1 - Public health facility [ ]
2 - Private health facility [ ]
3 - Used herbal medicine [ ]
4 - Bought drugs from a chemist/shop [ ]
5 - Sought help from relatives/friends/neighbors [ ]
6 - Others (specify) .................................................................

E6. Is the baby on treatment at present?

1 - YES [ ] 2 - NO [ ]

E7. Has the illness interfered with the baby’s breastfeeding?

1 - YES [ ] 2 - NO [ ]

If YES go to question E8
If NO go to question E9

E8. How has the illness of the BABY affected breastfeeding?

........................................................................................................

E9. Have you (mother) experienced any problems in breastfeeding your baby?

1 - Yes [ ] 2 - No [ ]

If YES go to question E10 to E12
If NO go to question E13

E10. What problems have you experienced?

1 - Inadequate breast milk [ ]
2 - Baby refusing to breastfeed [ ]
3 - Pain in breasts [ ]
4 - Other (specify) .................................................................
E11. Have the problems interfered with breastfeeding?

1-YES [ ] 2- NO [ ]

E12. How have the problems interfered with breastfeeding?

..........................................................................................................................

E13. Have you (mother) been sick in the last two weeks?

1-YES [ ] 2- NO [ ]

E14. If YES, what were you suffering from?

..........................................................................................................................

E15. Did/ has the illness interfered with breastfeeding of the baby?

1-YES [ ] 2- NO [ ]

E16. If YES, how did the illness affect breastfeeding?

..........................................................................................................................
SECTION F: MATERNAL ATTITUDES TOWARDS EXCLUSIVE BREASTFEEDING

Read the statement to the mother and indicate her response by ticking the in the appropriate box.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neither agree nor disagree</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1. Do you believe that exclusive breastfeeding is beneficial to the child?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F2. The age of the mother influences her ability to exclusively breastfeed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F3. A baby can survive without water</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F4. Husbands should be involved in decision making on whether to exclusively breastfeed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F5. Animal milk is suitable for a newborn baby</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F6. Breast milk is not adequate for babies 2 months or older</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F7. Formula feeding is the better choice if a mother plans to go out to work</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F8. Breastfed babies are healthier than formula fed babies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>F9.</strong> Breast milk is more easily digested than formula.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>F10.</strong> An infant cannot survive without water besides breast milk</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>F11.</strong> The number of times a mother has given birth to children will influence her ability to exclusively breastfeed or not</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## SECTION G: MATERNAL KNOWLEDGE ON EXCLUSIVE BREASTFEEDING

Read the statement to the mother and indicate her response in the appropriate box.

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1. Breastfeeding should be the first feed a baby is given after birth.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G2. The baby should be put to the breast within one after birth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G3. The first yellowish milk/colostrum should be fed to the baby</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G4. Breastmilk alone without even water can sustain the baby for six months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G5. Breastfeeding protects the baby from illnesses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G6. Expressed breastmilk should be fed to the baby when the mother is away</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G7. Breastfeeding helps the mother not to get pregnant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G8. Semi-solid/solid foods should be introduced to the baby at six months of age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G9. It is okay to for a pregnant woman to breastfeed her baby</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G10. A baby should be breastfed on demand</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SECTION H: SOURCES OF BREASTFEEDING INFORMATION

H1. Did you receive any counseling/information on breastfeeding/infant feeding?

1-Yes [ ] 2- No [ ]

H2. If YES, what was the source of the information/counseling?

1-Hospital/ Health Centre [ ]
2-Traditional birth attendant [ ]
3-Family/friends/relatives [ ]
4-Radio [ ]
5-Others (specify)………………………………………………………………………..

H3. When did you receive breastfeeding counseling? (To be addressed to the mothers who got the counseling from the health facility/hospital) probe for all occasions mentioned.

1-Before delivery during antenatal clinics [ ]
2-At the time of delivery [ ]
3-After delivery before leaving the hospital [ ]
4-During post-natal clinics [ ]

H4. What information did you receive?

Read the statement to the mother and indicate her response by ticking the in the appropriate box.

- Importance of exclusive breastfeeding to the infant and the mother [ ]
- Information on Infant and Young Child Nutrition [ ]
- Ideal time to introduce complementary feeding [ ]
- Managing breast conditions during breastfeeding [ ]
- Myths about exclusive breastfeeding [ ]
APPENDIX G: QUESTIONNAIRE (TRANSLATED IN SOMALI)

CILMI, HABDHAQAN, IYO MACAAMIL (KAP) OO KU SAABSAN NAASNUUJIN KHAAS AH (EBF) OO U DHEXEYSA HOOYADA HALKA MAR WAX DHASHAY IYO TAN IN BADAN WAX DHASHAY EE KU DHAQAN DEEGAANKA BARIGA WAJIR, EE KOONTIGA WAJIR, KENYA

TILMAAMaha
Fadlan sax (-) bokiska ay ku qorantahay jawaabta ugu haboon. Faalada waa in lagu qoraa meelaha banaan ee ku haboon.

FAAHAFAAHINNADA MAAMULEED
Lambarka Aqoonsiga buug su’aaleedka………………………………………………
Magaca Xaafadda………………………………………………………………………………
Magaca waraystaha …………… Magaca Jawaabaha…………………………
Waraysiga………………………………………………………………………………………
Buug su’aaleedka la hubiyay………………………………………………………………

QAYBTA A: WARBIXINTA ILMAHA
A3- Jinsiga: 1- Lab [ ] A2-Dhadig [ ]
A4-Taariikhda dhalashada……………… A5-Da’da ilmaha billo ah………………
QAYBTA B: ASTAAMAHA XOGTA DADKA QOYSKA

B1. Da’da hooyada oo sanado dhamaystiran ah .................................

B2. Heerka guur

1- Xaas leh [ ] 4- La-furay [ ]
2- Kali [ ] 5- Kala maqan [ ]
6- Laga dhintay [ ]

B3. Heerka waxbarasho

1- Waxbarasho toos majirto [ ]
2- Waxbarashada dadka Weyn [ ]
3- Dugsi hoose dhexe oo dhamaystiran [ ]
4- Dugsi hoose dhex oon dhamaystirnayn [ ]
5- Waxbarasho dugsi sare [ ]
6- Tababar heer shahaado [ ]
7- Waxbarasho heer dhiblooma ah [ ]
8- Waxbarasho heer digrii ah [ ]

B4. Shaqadaadu maxay tahay?

1- Shaqo aan joogto ahayn [ ]
2- Xaas guri joog ah [ ]
3- shaqo caadi ah (sheeg nooca shaqada)……………………………………
4- Iskaa u shaqaysasho (sheeg)………………………………………………

B5. Haddii aad xaas tahay

Ninkaagu muxuu ka shaqeeyaa?

1- Shaqo aan joogto ahayn [ ]
2- Shaqo caadi ah (sheeg nooca shaqada)……………………………………
3- Iskaa u shaqaysasho (sheeg)………………………………………………
QAYBTA C: ASTAAHMAHA DHAQAN DHAQAAL E E QOYSKA

C1. Maxay yihiin iliha aad dakhliga ka hesho?
   1- Mushaar shaqo [ ]  2- ninkayga [ ]
   3- Ganaacsi aan leeyahay [ ]
   4- Meelo kale (sheeg) ............................................................

C2. Ma waxaad ku nooshahay:
   1- Guri kiro ah [ ]  2- Guri aad leedahay [ ]
   3- Manyatta [ ]  3- deegaan kale oon rasmi ahayn [ ]


C4. Haddii aad guri kiro ah dagantahasy, waa imisa kirada aad bishii bixiso?
   Ksh ..............................................................

C5. Qiimaynta nooca xaaladda nolasha:

   Darbi ka samaysan;
   1- Jiingad bir ah [ ]  4- Bulakeeti la is dulsaaray [ ]
   2- Dhoobo iyo alwaaxyo [ ]  5- dhoobo iyo shamiito [ ]
   3- shamiito/dhagaxaan [ ]  6- looxyo [ ]
   7- ulo sarab ah [ ]
   8- Wax kale (sheeg) ..............................................................

   Saqaf ka samaysan;
   1- baati bir ah [ ]
   2- Mutuleel [ ]
   3- Cows duur ah [ ]
   4- Wax kale (sheeg) ..............................................................

   Sagxadda dhulka oo ka samaysan;
   1- Dhoobo [ ]
   2- Sibir [ ]
   3- Wax kale (Sheeg) ..............................................................
C6. Waa maxay waxa ugu wayn eed wax ku ifsato?

1- Faynuus [ ]
2- Koranto [ ]
3- Shamac [ ]
4- Soolar [ ]
5- Wax kale (Sheeg)………………………………………………………………………………

C7. Waa maxay waxa ugu badan eed wax ku karsato?

1- Qoryaha la shito [ ]
2- Dhuxul [ ]
3- Naafto [ ]
4- Gaas [ ]
5- Koranto [ ]
6- Wax kale (sheeg)………………………………………………………………………………

C8. Mahaysataa alaabahan soo socda?

1- raadiye [ ]
2- Baaskiil [ ]
3- Telfeshin [ ]
4 - Fiidyow/VCD/DVD [ ]
5- tefloon [ ]
6- Mooto [ ]
7- Gaari/taraag [ ]
8- Kareeto/gaadhi dameer [ ]
9- dhul [ ] (imisa hektar) …………………

C9. Xooo ma leedahay?

1- Lo [ ] (imisa?) …………………
2- riyo [ ] (imisa?)………………
3- ido [ ] (imisa?)………………
4- digaag [ ] (imisa?)………………
4- geel [ ] (imisa?)………………
5- Wax kale (sheeg)………………………………………………………………………………
QAYBTA D: WARBIXINTA QUUDINTA ILMAYA IYO QAAB

DHAQANADA

D1. Halkee buu [MAGACA] ku dhashay?

1- Guriga  [    ]
2- Goob caafimaad  [    ]
3- Guri TBA  [    ]

D2. Noocey ahayd dhalmadu?

1- Mid caadi ah  [    ]
2- Qalliin  [    ]
3- Qalliin horey loosii qorsheeyay  [    ]

D3. Waligaa naaskaa ma nuujisay (magaca)?

1= Haa  [    ]  2= Maya  [    ]
3= Ma Aqaan  [    ]

Haddii aad tiri Maya, aad E4
Haddii aad tiri Haa, aad E5

D4. Haddii aad tiri Maya, sababtu maxay taay

1= Caano malaha  [    ]  2= Ma rabin inaan naasnuujiyo  [    ]
3= Aaminsanaanta caado dhaqameed (ilmuhu wuu dhiman doonaa) [    ]
4= Wax kale  [    ]

D5. Haddii aad tiri haa, goormaa ugu horeysay dhalashada kadib ood [Magaca] naaskaa siisay?

Haddii ay ka yarayd hal saac qor 00  [    ]
Haddii ay ka yarayd 24 saac qor tirada saacadaha  [    ]
Haddii ay ka badnayd 24 saac qor tirada maalmaha  [    ]
Haddii aysan hooyadu garanayn, qor: 88  [    ]
D6. Intii lagu jiray 3dii maalin ee u horeysay dhalmada, ma siisay [Magaca] dareeraha/qoyaanka naaskaaga ka soo baxay?

1= Haa [ ]
2= Maya [ ]
3= Ma Aqaan [ ]

D7. 3dii bari ee dhalmada ka danbaysa, [Magaca] ma lasiiyay wax uu cabbo oon ka ahayn caanaha naaska?

1= Biyo cad [ ]
2= Biyo sonkor leh ama biyo kuluukoos leh [ ]
3= Caanaha budada ah ama caano fareesh ah [ ]
4= Nafaqada ilmaha (tusaale. Nan) [ ]
5= Biyo cinab [ ]
6= Lama siin [ ]
7= Wax kale (sheeg)…………………………………………………………………………………………..

D8. Wali ma naasnuuhjisaa [Magaca]? 1= Haa [ ]
2= Maya [ ]


Intii lagu jiray maalintii iyo habaynkii, [Magaca] dareerayaashan soo socda wax ma ka qaatay?

*(Fadlan hooyada u tusaaalee jawaabaha oo ku qor koodhadhka/jawaabaha qaybta ay soo hoos galayaan)*
vi. Caanaha naaska
Kaliya hal jawaab ayaa koodh la siiyaa sida hoose:
1. Haa
2. Maya
3. Ma Aqaan

vii. Nafaqada ilmaaha
1. Haa
2. Maya
3. Ma AQAAN

viii. Caano kalke: caano xoolaad, caano la qasay oo budo ahaa, (Halwa, Hayat, Coast), Caano boore.
1. Haa
2. Maya
3. Ma Aaqaan

ix. Juus la macaa neeyayened (Zeitun, Mushakil, vimto, Ananas, savannah,) Soda
1. Haa
2. Maya
3. Ma Aqaan

x. Shaah/Kofee
1. Haa
2. Maya
3. Ma Aqaan

xi. Biyo cadr
1. Haa
2. Maya
3. Ma Aqaan
4. Boorash jilicsan

1. Haa
2. Maya
3. Ma Aqaan

QAYBTA E: CAAFIMAADKA HOOYADA IYO DHALLAANKA

E1. Ilmuuhu mawuu jiraday labadii asbuuc ee u danbaysay?

1- Haa [ ] 2- Maya [ ]

Haddii ay HAA tahay, aad su’aasha E2 ilaa E8

Haddii ay MAYA tahay, u bood E2 ilaa E8 oo aad su’aasha E9

E2. Haddii aad haa tiri, xaalad nooceeh ah bay ilmaha jiradiisu ahayd?

1- Mattag [ ] 4- Hargab/ duray [ ]
2- Shuban [ ] 5- Qufac [ ]
3- Qandho [ ] 6- Malaariyo [ ]

7- Wax kale (sheeg)………………………………………………………………………………..

E3. Ilmaha ma u raadisay daryeel caafimaad?

1- HAA [ ] 2- MAYA [ ]

E4. Haddii aad tiri MAYA, maxaad u raadsan wayday caawin caafimaad?

……………………………………………………………………………………………………..

E5. Haddii aad haa tiri xageed ka raadsatay daryeelka caafimaad?

1- Goob adeeg caafimaad oo dadwayne [ ]
2- Goob adeeg caafimaad oo gaar loo leeyahay [ ]
3- Waxaa la isticmaalay daawa dhaqameed [ ]
4- Daawo laga soo gatay farmashi/dukaan [ ]
5- caawin laga raadsaday qaraabada/saaxiibada/dariska [ ]

6- Wax kale (sheeg)………………………………………………………………………………..
E6. Ilmaha ma daawaa u socda hadda?
1-HAA [ ] 2-MAYA [ ]

E7. Jiradu ma saaaysay naasuujinta ilmaha?
1-HAA [ ] 2- MAYA [ ]

Haddii ay HAA tahay aad su’aasha E8
Haddii ay MAYA tahay aad su’aasha E9

E8. Sidee bay jiradu us aamsaysay naas nuujinta ILMAHA?

E9. Adigu (hooyada) wax dhibaato ah makugu keentay naasnuujinta ilmahaaga?
1-Haa [ ] 2-Maya [ ]

Haddii ay HAA tahayaad su’aasha E10 ilaa E12
Haddii ay MAYA tahay aad su’aasha E13

E10. Dhibaatooyinkeed dareentay?
1-Caanaha naska ooyar [ ]
2-Illamaha oo didaya inuu naaska nuugo [ ]
3-Xanuun naasaha ah [ ]
4-Wax kale (sheeg)……………………………………………………………………

E11. Dhibaatooyinku saamayn ma ku yeesheen naas nuujinta?
1-HAA [ ] 2- MAYA [ ]

E12. Sidee bay dhibaatooyinku u saameeyeen naasnuujinta?

E13. Adigu (hooyada) ma xanuunstay labadii asbuuc ee u danbaysay?
1-HAA [ ] 2-MAYA [ ]

E14. Haddii aad tiri HAA, maxay ahayd jiradii khaysay?

E15. Jiradu ma saamayn ma ku yeelataa naasnuujinta ilmaha?
1-HAA [ ] 2-MAYA [ ]

E16. Haddii ay HAA tahay, side bay jiraduu samsay naasnuujinta?

E17. Jiradu ma saaaysay naasuujinta ilmaha?
1-HAA [ ] 2- MAYA [ ]

Haddii ay HAA tahay aad su’aasha E8
Haddii ay MAYA tahay aad su’aasha E9

E18. Sidee bay jiradu us aamsaysay naas nuujinta ILMAHA?

E19. Adigu (hooyada) wax dhibaato ah makugu keentay naasnuujinta ilmahaaga?
1-Haa [ ] 2-Maya [ ]

Haddii ay HAA tahayaad su’aasha E10 ilaa E12
Haddii ay MAYA tahay aad su’aasha E13

E20. Dhibaatooyinkeed dareentay?
1-Caanaha naska ooyar [ ]
2-Illamaha oo didaya inuu naaska nuugo [ ]
3-Xanuun naasaha ah [ ]
4-Wax kale (sheeg)……………………………………………………………………

E21. Dhibaatooyinku saamayn ma ku yeesheen naas nuujinta?
1-HAA [ ] 2- MAYA [ ]

E22. Sidee bay dhibaatooyinku u saameeyeen naasnuujinta?

E23. Adigu (hooyada) ma xanuunstay labadii asbuuc ee u danbaysay?
1-HAA [ ] 2-MAYA [ ]

E24. Haddii aad tiri HAA, maxay ahayd jiradii khaysay?

E25. Jiradu ma saamayn ma ku yeelataa naasnuujinta ilmaha?
1-HAA [ ] 2-MAYA [ ]

E26. Haddii ay HAA tahay, side bay jiraduu samsay naasnuujinta?
### QAYBTA F: HABDHAQANNADA HOYOADA EE KUWAJAHAN

#### NAASNUUJINTA

Oodhaahda hooyada u akhri oo sheeg jawaabteeda adoo saxaya bokiska ku haboon.

<table>
<thead>
<tr>
<th>Oodhaahda</th>
<th>Si wayn baan ugu raacsanahay</th>
<th>Waan ku raacsanahay</th>
<th>Ma ogali mana diidani</th>
<th>Kuma raacsani</th>
<th>Siwayn baan u diidanahay</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1. Ma aaminsantahay in naasnuujinta barax tiran ay faa’iido u leedhaay ilmaha?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F2. Da’daha hooyada waxay saamayn ku yeelataa awoodeeda ay si badhaxtiran naaska ugu nuujin karto ilmaheeda</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F3. Ilmo wuu noolaan karaa biyo la’aan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F4. Nimanka waa in ay qayb ku yeeshaan go’aan qaadashada ku saabsan in ilmaha la siiyoo caanaha naaska oo kaliya</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F5. Caanaha xoolaha waxay u haboonyihiin ilmaha dhawaan dhasay</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F6. Caanaha naasku kuma filna caruurta 2 bilood jirka ah ama kasii wayn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F7. Ku quudinta masaasaddu waa xulashada fiican haddii ay hooyadu</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
</tr>
<tr>
<td>132</td>
<td>ay qorshayso inay shaqo aaddo</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F8. Caruurta laaka la nuujyo way ka caafimaad fiicanyihin kuwa masaasadda lagu quudiyo</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F9. Caanaha naasku dheefshiidka way ugu fududyihiin kuwa masaasadda lagu siyoi ilmaha.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F10. Ilmo ma noolaan karo biyo la’aan caanaha naaska ka sokow</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F11. Tirada inta jeer ee ayhooyadu caruur dhashay waxay saamayn ku yeelataa awoodeeda ah inay ilmaha caano naas oo kaliya siiso</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
QAYBTA G: AQOONTA HOOYADA EE KU SAABSAN NAASNUUJINTA

BARAX TIRAN

Oodhaahda hooyada u akhri oo sheeg jawaabteeda adoo saxaya bokiska ku haboon.

HAA MAYA

G1. Naasnuujintu waa in aynoqotaa quudka ugu horeeya ee ilmaha la siiyon

G2.Ilmaha waa in naaska la siiyo hal saac gudhiis markuu dhasho kadib

G3. Caanaha ugu horeeya ee jaalaha ah/ danbarka waa in ilmaha la siiyaa

G4. Caanaha naaska oo kliya oo aysan xitaa la socon biyo ayaa kaafin kara ilmaha ilaa lix bilood

G5.Naasnuujintu waxay ilmaha ka ilaalisaa jirooyinka

G6.Caanahas naaska laga liso ee weelka lagu shubo waxaa ilmaha la siiyaa marka ay hooyadu maqantahay

G7.Naasnuujintu waxay hooyada ka caawisaa inaysan uur yeelan

G8. Cuntada adaygga xigta/cuntada adag waa in ilmaha la baraa markuu j iro lix bilood

G9. Waa caadi in hooyada uurka leh ay ilmaheeda naaska nuujiso

G10. Ilmaha waa in naaska la siiyaa markuu dalbado
QAYBTA H: ILAHAY WARBIXINTA NAASNUUJINTA

H1. Ma heshay wax la talin/warbixin ah oo ku saabsan naasnuujinta/quudinta ilmaha?

1- Haa [ ] 2- Maya [ ]

H2. Haddii ay HAA taha, maxay ahayd meeshii aad ka heshay warbixinta/latalinta?

1- Isbitaal/Xarun Caafimaad [ ]
2- Ilo dhaqameed oo laga helo xogta umulaha [ ]
3- Qoyska/saaxiibo/qaraabo [ ]
4- Raadiye [ ]
5- Meelo kale (sheeg)………………………………………………………………………………


1- Dhalmada ka hor inta lagu jiro wakhti dhalmadu soo dhawaato [ ]
2- Wakhtiga dhalmada [ ]
3- Dhalmada kadib ka hor intaadan isbitaadka ka tagin [ ]
4- Inta lagu jiro wakhtiga umusha [ ]

H4. Maxay tahay warbixintaad heshay?

Oodhaahda hooyada u akhri oo sheeg jawaabteeda adoo saxaya bokiska ku haboon.

a) Muhiimadda ay ilmaha iyo hooyada u leedahay naasnuujinta xhaliga ah [ ]

b) Warbixinta ku saabsan quudinta saqiirk'a iyo ilmaha yar [ ]

c) Wakhtiga la barto quudka kaabidda ah ee saacideeya [ ]

d) Maaraynta xaaldaaha naaska inta lagu jiro naasnuujinta [ ]

e) Barashada macluumaadka ku saabsan naasnuujinta xhalliga ah [ ]
APPENDIX H: FOCUS GROUP DISCUSSION GUIDE

FGD’s will be conducted for breastfeeding mothers, non-breastfeeding and Traditional Birth Attendants (TBA’s) separately to elicit information on mothers’ KAP on EBF, sources of information on breastfeeding, challenges and constraints to EBF. The questions to be asked in the FGD are as follows:

a. What are the sources of infant feeding information in this community?
b. What are some of the messages that you get regarding breastfeeding?
c. Do you agree/concur with these messages? If no, why?
d. From your understanding, what are the benefits of breastfeeding?
e. Do you believe that a baby can be fed on breast milk alone without even water for the first six months?
f. Is exclusive breastfeeding a common practice in this community? If no, why not?
g. What are the factors that encourage mothers to practice exclusive breastfeeding for six months?
h. Why do some mothers choose not to practice exclusive breastfeeding?
i. Do you have suggestions on what can be done to encourage mothers to practice exclusive breastfeeding for six months in this community?
j. Is it appropriate for a mother to express milk for the baby?
k. How should the expressed milk be treated before giving it to the baby?
l. Any information you would like to tell me about breastfeeding in this community.
APPENDIX I: KEY INFORMANT INTERVIEW GUIDE

Key Informants including nurses, clinicians and nutritionists working at Wajir District Hospital MCH will be interviewed using structured questions on KAP and challenges facing mothers on EBF. The questions are as follows:

1. In your opinion, are the breastfeeding practices in this community satisfactory?
2. Is exclusive breastfeeding common in this community?
3. What factors motivate women to either exclusively breastfeed or not?
4. What challenges if any, do mothers experience in the practice of EBF?
5. What are the sources of information on EBF for breastfeeding mothers?
6. What is the maternal level of knowledge on EBF?
7. What is the attitude of breastfeeding mothers towards EBF?
8. Do you think that the practice of EBF should be encouraged?
9. Do healthcare providers support, educate and encourage mothers on EBF satisfactorily?
10. Any other information you would like to let me know?
APPENDIX J: RESEARCH CLEARANCE PERMIT IDENTIFICATION

THIS IS TO CERTIFY THAT:
MR. MAHAT JIMALE MOHAMED
of KENYATTA UNIVERSITY - 01000
Nairobi, has been permitted to conduct
research in WAHIR COUNTY
on the topic: COMPARISON OF
KNOWLEDGE, ATTITUDES AND
PRACTICES ON EXCLUSIVE
BREASTFEEDING BETWEEN
PRIMIPAROUS AND MULTIPAROUS
MOTHERS ATTENDING WAHIR DISTRICT
HOSPITAL, WAHIR COUNTY, KENYA
for the period ending:
31st December, 2014

Licensee:

Applicant's Secretary
Signature

PERMIT IDENTIFICATION

NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION

Republic of Kenya

National Commission for Science,
Technology and Innovation

Serial No. 3164

RESEARCH CLEARANCE
PERMIT

CONDITIONS:

1. You must report to the County Commissioner and
the County Education Officer of the area before
embarking on your research. Failure to do so may lead
to the cancellation of your permit.
2. Government Officers will not be interviewed
without prior appointment.
3. No questionnaire will be used unless it has been
approved.
4. Excavation, filming and collection of biological
specimens are subject to further permission from
the relevant Government Ministries.
5. You are required to submit at least two (2) hard
copies and one (1) soft copy of your final report.
6. The Government of Kenya reserves the right to
modify the conditions of this permit including
its cancellation without notice.
APPENDIX K: RESEARCH CLEARANCE PERMIT

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471, 2241349, 310571, 2219420
Fax: +254-20-318245, 318249
Email: secretary@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote Ref: No.

9th Floor, Uthiru House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Date: 11th September, 2014

NACOSTI/P/14/8688/2875

Mahat Jimale Mohamed
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on “Comparison of knowledge, attitudes and practices on exclusive breastfeeding between primiparous and multiparous mothers attending Wajir District Hospital, Wajir County, Kenya,” I am pleased to inform you that you have been authorized to undertake research in Wajir County for a period ending 31st December, 2014.

You are advised to report to the County Commissioner, the County Director of Education and the County Coordinator of Health, Wajir County before embarking on the research project.

On completion of the research, you are expected to submit two hard copies and one soft copy in pdf of the research report/thesis to our office.

Said Hussein
FOR: SECRETARY/CEO

Copy to:

The County Commissioner
The County Director of Education
The County Coordinator of Health
Wajir County.
APPENDIX L: ETHICAL REVIEW APPROVAL

KENYATTA UNIVERSITY
ETHICS REVIEW COMMITTEE

Email: buerc.chairman@kuc.ac.ke
        buerc.secretary@kuc.ac.ke
        eroin2006@gmail.com
Website: www.ku.ac.ke

Our Ref: KUI/R/COMM/51/321

Date: 30th April, 2014

Mahat Jimale Mohamed,
Department of Foods, Nutrition and Dietetics,
Kenyatta University,
P.O. Box 43844

Dear Mr. Mohamed,

APPLICATION NUMBER KUI/201/178 – “A COMPARISON OF KNOWLEDGE, ATTITUDES AND PRACTICES ON EXCLUSIVE BREASTFEEDING AMONG FIRST TIME AND MULTIPAROUS MOTHERS IN WAJIR EAST, WAJIR COUNTY, KENYA”

1. IDENTIFICATION OF PROTOCOL
The application before the committee is with a research topic, “A comparison of knowledge, attitudes and practices on exclusive breastfeeding among first time and multiparous mothers in Wajir east, Wajir County, Kenya” received on 28th February, 2014 and discussed on 8th April, 2014.

2. APPLICANT
Mahat Jimale Mohamed,
Department of Foods, Nutrition and Dietetics,
Kenyatta University,
P.O. Box 43844

3. SITE
Wajir east, Wajir County, Kenya.

4. DECISION
The committee has considered the research protocol in accordance with the Kenyatta University Research Policy (section 7.2.1.37) and the Kenyatta University Ethics Review Committee Guidelines, and is of the view that against the following elements of review,

(i) Scientific design and conduct of study,
(ii) Recruitment of research participant,
(iii) Care and protection of research participants,
(iv) Protection of research participant’s confidentiality,
(v) Informed consent process,
(vi) Community considerations.

AND APPROVED and that the research may proceed ON CONDITION that you incorporate its advise below.