

**FIRST-TIME MOTHER'S KNOWLEDGE AND PRACTICES ON
EXCLUSIVE BREASTFEEDING IN THE POST NATAL WARDS AT
KENYATTA NATIONAL HOSPITAL**

**Principal Investigator
Dr. Priscilla Kashero
H58/11724/2018
Department of Paediatrics and Child Health**

**A RESEARCH DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF
MASTERS OF MEDICINE IN DEPARTMENT OF PEDIATRICS AND CHILD
HEALTH, FACULTY OF HEALTH SCIENCES, UNIVERSITY OF NAIROBI.**

DECLARATION

I declare that this dissertation is my work and has not been published or presented for a degree in any other institution

Signature:



Date: 24th August 2022

Dr. Priscilla Kashero

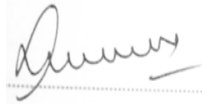
SUPERVISOR APPROVALS

This dissertation has been presented with our full approval as supervisors.

Professor Frederick N. Were, MBCHB, CTM, Mmed (Peads), FMC, DCEH, PHD, EBS

Professor of Perinatal and Neonatal Medicine, University of Nairobi, Kenya

Signature:



Date: 8TH September 2022

Dr. Rashmi Kumar, MBCHB, MBBS, MD, DAA

Lecturer, Department of Pediatrics and Child Health, Consultant pediatrician/ Pediatric Critical care, University of Nairobi, Kenya

Signature:



Date: 9th September 2022

Dr. Ojee Edna, MBChB, Mmed (Pead)

Lecturer, Department of Pediatrics and Child Health, Consultant pediatrician, Faculty of Health Sciences, University of Nairobi.

Signature:



Date: 10th September 2022

TABLE OF CONTENTS

SUPERVISOR APPROVALS	iii
LIST OF ABBREVIATIONS	vii
LIST OF FIGURES	viii
LIST OF TABLES	ix
ABSTRACT	1
CHAPTER ONE: INTRODUCTION	3
1.1. Background	3
CHAPTER TWO: LITERATURE REVIEW	5
2.1. Overview of Exclusive Breastfeeding	5
2.2. Benefits of Exclusive Breastfeeding	5
2.3. Knowledge of mother's on Exclusive Breastfeeding	6
2.4. Practices of mothers towards EBF	8
2.5. Factors influencing utilization of EBF	11
2.5.1. Sources of Information on Breastfeeding	13
2.6. Problem statement	16
2.7. Justification of the study	17
2.8. Research questions	17
2.9. Objectives.....	18
2.9.1. Primary Objective	18
2.9.2. Secondary Objectives	18
CHAPTER 3: METHODOLOGY	19
3.1. Research design.....	19
3.2. Study area.....	19
3.3. The study population.....	19
3.4. Inclusion and exclusion criteria.....	19
3.4.1. Inclusion criteria	19
3.4.2. Exclusion criteria	20
3.5. Sample size calculation	20
3.5.1. For quantitative data	20

3.5.2.	Sample size for qualitative data	21
3.6.	Sampling	21
3.6.1.	Quantitative data	21
3.6.2.	Qualitative data	21
3.7.	Data collection tools	21
3.8.	Data collection procedure.....	22
3.8.1.	Collection of quantitative data	22
3.9.	Variables in the study.....	23
3.10.	Data quality control.....	24
3.11.	Data analysis	24
3.12.	Ethical consideration	25
CHAPTER FOUR: RESULTS.....		26
4.1.	Introduction	26
4.2.	Demographic characteristics of first-time mothers in Post-natal wards at Kenyatta National Hospital	27
4.3.	Level of Knowledge on Exclusive Breastfeeding practice among first time mothers in post-natal ward at Kenyatta National Hospital.	28
4.3.1.	The level of knowledge.....	29
4.3.2.	Qualitative analysis on Knowledge.....	30
4.4.	Level of practice on exclusive Breastfeeding among first time mothers in post-natal ward at Kenyatta National Hospital.	32
4.4.1.	Qualitative analysis on Practice	34
4.5.	Demographic Factors associated with breastfeeding and complementary practice among first time mothers in post-natal ward at Kenyatta National Hospital.....	35
CHAPTER FIVE: DISCUSSION.....		37
5.1.	Discussion	37
5.2.	Strength and Limitation of the study	39
CHAPTER SIX: CONCLUSION AND RECOMMENDATION		41
6.1.	Conclusion.....	41
6.2.	Recommendations	41
REFERENCES		42
APPENDICES		47
Appendix I: Consent Form		47
Appendix II: Questionnaire		49
Appendix III: Focus Group Discussion Guide		52

Appendix IV: Workplan	53
Appendix V: Study Budget	54
Appendix VI: Ethics Approval	55
Appendix VII: Certificate of Registration	57

LIST OF ABBREVIATIONS

CF – Complementary Feeding

EBF – Exclusive Breast feeding

FGD – Focus Group Discussion

KNH – Kenyatta National Hospital

SPSS – Statistical Package for Social Sciences

UoN – University of Nairobi

WHO – World Health Organization

LIST OF FIGURES

Figure 1: Conceptual Framework	15
Figure 2: Study Flowchart	26
Figure 3 Level of Knowledge	30
Figure 4: Practices on EBF among first time mothers	34

LIST OF TABLES

Table 1: Variables in the study	23
Table 2: Demographic characteristics of first-time mothers in Post-natal wards at Kenyatta National Hospital	27
Table 3: Knowledge components rating score among the respondents	29
Table 4: Knowledge among respondents	29
Table 5: Demographic Factors associated with exclusive breastfeeding practice.....	36

ABSTRACT

Background: As a global public health strategy World Health Organization (WHO) recommends exclusive breastfeeding (EBF) for the first six months as the optimal mode of infant feeding, providing adequate nutrition for the baby and protection against infectious diseases. It is the most effective intervention to improve child health and survival, especially in developing countries. Numerous health, financial, social, and economic benefits of EBF have been documented. Despite the documented short-term and long-term benefits of EBF to children and their families, rates remain low in most parts of the world. First-time mothers are regarded as a vulnerable group and highly likely to be influenced by anxiety and ease in receiving information relating to infant feeding. In studies conducted in different settings, first-time mothers are more accepting of non-scientific approaches to care from various community-based sources, which has a detrimental influence on the wellbeing of their children. Thus, understanding the knowledge and practice of exclusive breastfeeding among first-time mothers will help offer a more tailored health education messaging to ensure WHO recommendations are followed.

The purpose of the study: To evaluate the level of knowledge and practices on exclusive breastfeeding among first-time mothers in the Post-natal wards at Kenyatta National Hospital.

Methodology: The study adopted a cross-sectional research design utilizing quantitative and qualitative techniques. A consecutive sampling technique was used to sample 89 first-time mothers who met the inclusion criteria. Two Focus group discussions of 8 participants were also conducted to provide a detailed understanding of the study objective effectively. A purposive sampling technique was used to recruit participants into the two groups. Data analysis was done using Statistical Package for Social Sciences (SPSS version 26), and content analysis was done to analyze qualitative data to obtain themes. Proportions were used to calculate the level of knowledge and practice. The scores for the knowledge scale, including 14 questions, were measured on a 5-point Likert scale with total scores ranging from 14 to 70. A score above the mean was considered good knowledge. In addition, chi-square tests for association and binary logistic regression were conducted.

Results: The mean score for knowledge scores was 61, with the lowest score reported being 46, and the highest score recorded being 68. The findings revealed that 73% of the respondents had good knowledge. The results established that 91% of the respondents knew that a baby should be put on the breast within one hour after delivery, 87.6% of the respondents knew that colostrum is highly nutritious to the baby, 86.5% knew that a baby should be introduced to other foods after six months of exclusive breastfeeding. The findings also revealed that 82% of the respondents had received information on exclusive breastfeeding during the pregnancy, 71.9% asserted that they knew how to position the baby, therefore effective breastfeeding. In investigating the practice, 76% of the respondents started breastfeeding within one hour after safe delivery, 94.4% asserted that their babies had received colostrum. In comparison, 53.8% stated that they were expressing milk because the baby was unable to suckle. Education level, OR =2.11, 95%CI: 1.34 -3.69, p = 0.032) and

knowledge level, OR =8.0, 95%CI: 2.8 - 22.6, p = 0.048) were significantly associated with practice.

Conclusion and Recommendations: The findings have shown that the level of knowledge on EBF is high, although the practice is moderate. It is essential to emphasize improving the level of practice through continuous training and educating mothers on the benefits of exclusive breastfeeding and the need to improve infant health through positive practices such as proper latching, milk expression, and breastfeeding frequently.

CHAPTER ONE: INTRODUCTION

1.1. Background

The growth of a child is defined by adequate nutrition during infancy. Effective breastfeeding and complementary feeding practices are essential to the growth, health, and development of children (1). The World Health Organization (WHO) recommended that infants be exclusively breastfed for the first six months, followed by breastfeeding and complementary foods for at least two years (2). Exclusive breastfeeding for the first six months has essential benefits such as the reduced risk of pneumonia, gastrointestinal infect, and otitis media.

Most mothers, especially first-time mothers, have challenges in setting their priorities concerning meeting personal goals and adherent to the existing recommendations for continued breastfeeding (3). The major challenges associated with low efficacy on exclusive breastfeeding include mother's perception of producing inadequate milk, attitude towards breastfeeding, and supplementary feeding (4). The societal barriers include employment stress, length of maternity leave, inadequate breastfeeding knowledge, and lack of guidance and encouragement from healthcare professionals on the best practices involving breastfeeding (5).

Knowledge and practice among first-time mother's present emphasis on the level of efficacy and ability to provide quality care for infants. Almost all mothers know that breastfeeding is nutritious to an infant (6). According to a study conducted in rural Egypt among mothers of children less than two years, it was observed that all mothers in the study knew that breastfeeding is the best nutritional source for the baby. Around 84% of the mothers initiated breastfeeding immediately after delivery. In comparison, 42% of the mothers did not follow

WHO recommendations on breastfeeding timelines since they offered pre-lacteal feeds to babies before lactation (7).

Motee et al. (2014) sought to assess the breastfeeding practice among mothers in Mauritius. The results showed that breastfeeding practice had increased significantly from 72% in 1991 to 93.4 in 2013. However, exclusive breastfeeding was conducted by only 17.9% of the mothers for the first six months. Most of the mothers practiced exclusive breastfeeding for the first two months. Complementary feeding was commonly initiated between the first 4 to 6 months (8). Thus, the practice of exclusive breastfeeding for the first six months as recommended was low. According to Agunbiade and Ogunleye (2012), identified factors that influence feeding practice in infants were the type of delivery, alcohol consumption, occupation, education level, and breast problems (9).

In a multicenter study conducted in Bangladesh, India, Nepal, Pakistan, Brazil, Peru, South Africa, Tanzania, identified that the prevalence of exclusive breastfeeding in the first month since birth was 60%. The early interruption was associated with first-time mothers, pre-lacteal feeding, negative attitude towards breastfeeding, and loss of colostrum (10).

In Kenya, mothers have varied knowledge and practice on exclusive breastfeeding. Exclusive breastfeeding in Kenya for children under six months has increased from 32% in 2008 to 61% in 2014. The proportion of babies that are still exclusively breastfed in their 4th and 5th month in Kenya is 42% (11). A mixed-methods study conducted in rural coastal Kenya among first-time mothers showed that most of the first time mothers had a family member or a neighbor to help with childcare. Married first-time mothers felt obliged to follow advice from their mother-in-law as a show of respect and maintain a positive relationship. Further study outline that breastfeeding problems were reported in 80% of all the participants. The difficulties included nipple pain, breast engorgement, and insufficient milk supply (12). With

the noted gap, there is a need to assess the level of knowledge and practice of first-time mothers on exclusive breastfeeding.

CHAPTER TWO: LITERATURE REVIEW

2.1. Overview of Exclusive Breastfeeding

According to the Global strategy for infant and young child feeding, appropriate infant feeding is the cornerstone of care for childhood development. Exclusive breastfeeding (EBF) for the first six months and continued breastfeeding with safe, appropriate and adequate feeding is recommended as a global health policy in both developing and developed countries (13). The lives of 95 babies could be saved every hour if a new mother around the world initiated breastfeeding one hour after giving birth. The 2019 Global breastfeeding scorecard reported that only 41% of children under 6 months are exclusively breastfed (14). Despite the recent increase of EBF to 61.4% from 32% Kenya is still way below the 80% target by the Kenyan government and WHO recommended rate of 90% (12).

2.2. Benefits of Exclusive Breastfeeding

Exclusive breastfeeding (EBF) is defined as feeding the infant with breast milk alone for the first 6 months of life. The infant is allowed to take drops of vitamins, minerals and oral rehydration Solutions, if prescribed (5). EBF has been documented to confer many benefits to the child and the mother. For the child, breast milk is highly nutritious and contains antibodies that protect the child against diseases (7). Children who are exclusively breastfed have decreased risk of getting infections and reduced risk of Chronic illnesses later in life. Furthermore, exclusively breastfed children have shown to have good sensory and cognitive development, less risk of being malnourished and decreased risk of mortality and morbidity (15).

For the mother, initiation of breastfeeding helps uterine contractions for easy of removal of placenta and EBF has a hormonal effect which helps delay menstruation. Longer duration of breastfeeding is associated with decreased risk of ovarian and breast cancer. Despite the well documented benefits of EBF , globally only 41% of infants are exclusively breastfed, in the developing countries the rate is lower at 37%,in sub Saharan Africa a region with high rates of child mortality and malnutrition, only 36% of infants are exclusively breastfed (4).

2.3.Knowledge of mother's on Exclusive Breastfeeding

Knowledge is a prerequisite for practice and maternal choices and practices are primarily influenced by maternal knowledge on IYCF (16). First time mothers are faced with a new task in raising a child for the first time, which is likely to influence the level of care. Antenatal care, as well as post-natal care, are the most common settings where first-time mothers can learn about the new experiences that are likely to have a major influence on knowledge and the level of practice on exclusive breastfeeding (17).Knowledge of exclusive breastfeeding provides the basis for mothers to make informed decisions. There are different aspects of knowledge that are assessed in determining mothers' ability to understand the level of care. There is a difference in knowledge between first-time mothers and multiparous mothers, which outline the need to understand specific aspects that influence commitment to exclusive breastfeeding (18).

In a cross-sectional survey study conducted in Kwale County, Kenya, it was identified that 95% reported having received advice on breastfeeding from health care providers. About 65% knew that breastfeeding of a newborn child should be initiated within the first one hour. Additionally, 25% of mothers said the infants would be thirsty if they are not given water. Half of the mothers agreed that crying is a sign that the mother's milk is not sufficient. About 30% of the mothers did not know that EBF until six months can be adequate for the infant. More than half (52.1%) of the mothers did not know that feeding the infant on formula and

other feeds could affect breast milk quantity. The majority (84%) of the mothers were not aware that breast milk could be expressed and kept for later use (19).

A cross-sectional descriptive study conducted in Pakistan investigating knowledge, attitude, and practices of mothers regarding complementary feeding found that 48% of the mothers knew that exclusive breastfeeding was sufficient for the first six months, 34% asserted that EBF should be continued till 2 -4 months. The findings also showed that 57% of the mothers considered 4 to 6 months as being appropriate to start complementary feeding. Doctors and healthcare providers were the major sources of information relating to knowledge about common commercially available supplementary food items. Knowledge of when to increase caloric value was a challenge to many, considering that 62% of the respondents did not know this aspect. Most mothers favored the continuation of breastfeeding for up to 2 years (20). The findings from the study establish the need to help promote efficiency and care among first-time mothers.

Another descriptive cross-sectional study conducted in Ethiopia investigating mothers' knowledge on exclusive breastfeeding revealed that 69% of the respondents had good experience of breastfeeding while 30% had poor knowledge of breastfeeding. Approximately 82% of the mothers knew about EBF; the primary source of information was healthcare institutions. Around 65% of the mothers knew about the efficacy of breastmilk alone for the first six months. Most mothers preferred EBF because they associated the practice with improved infant health and well-being, such as the ability to prevent diarrheal and respiratory diseases (21).

In a qualitative study conducted in Ghana, it was revealed that some of the respondents knew issues involved in breastfeeding among first-time mothers. Those who knew about breastfeeding benefits could explain in detail, indicating that they had some education on

breastfeeding. Breastfeeding was associated with healthy and strong children. In response to complementary feeding, there was a varied view regarding the use of formula feeding. Some expressed strong reservations with the use of a formula to feed the newborn baby. This is from the belief that the formula may not be safe because it is in a tin. Others also believed that the formula is full of chemicals, therefore not appropriate for the baby. The use of homemade complementary feeding was the most common among first-time mothers (14).

Another qualitative research conducted among the first African American mothers identified that most of them obtained most of the information they knew about breastfeeding from social media across different websites. However, most of them did not check the websites; hence, they were not sure whether the information they received was accurate. Recalling infant feeding among first-time mothers was a major challenge (22).

2.4. Practices of mothers towards EBF

WHO has developed various strategies to promote the practice of EBF globally. Kenya has adopted various WHO strategies to promote EBF practices in the country. The strategies include Infant and Young feeding (IYCF), the Baby Friendly Hospital Initiative (BFHI) and prevention of mother to child transmission of HIV (PMTCT). The practice of EBF is highly dependent on the knowledge of the mother. Mothers in developing countries engage in mixed feeding for many reasons. A study conducted in Nigeria revealed that EBF is rarely practiced, and fewer mothers reach six months of EBF. Some of the mothers who participated in the study affirmed that they began complementary feeding in the second or third month (22). This is contrary to WHO guidelines regarding complementary feeding programs. Early initiation of breastfeeding was associated with higher maternal education, ANC visits, place of delivery, income, and mother's age. Educated mothers, older mothers and mothers from wealthier households exclusively breastfeed their babies. The risk for bottle-feeding was

higher among educated mothers and fathers and women from wealthier households, including mothers who made frequent ANC visits (19).

Sutherland (2012) sought to investigate maternal characteristics associated with breastfeeding initiation and success among first-time mothers and multiparous women. The study revealed that there was a significant decrease in breastfeeding initiation within increasing birth order. Successful breastfeeding in the first pregnancy influenced subsequent breastfeeding initiation and success. Women who did not attempt breastfeeding or who reported unsuccessful attempts to breastfeed at first birth were unlikely to initiate breastfeeding at later births (23).

In a study conducted in rural Malawi, among first-time mothers, EBF was considered a major risk to child wellbeing among the majority of mothers; hence supplementary water herbal infusions are believed to enhance growth, quench the infant's thirst, and serve as food and medicine. Mothers also had an understanding that breastfeeding was physically draining, especially for mothers who have limited access to nutritious and adequate amounts of food (23). Some Indian communities believe infants need additional fluids to maintain body-water balance. In Honduras, solid foods are introduced early to extend the time between feeds and because mothers find breastfeeding to be time demanding. They also believe that infants have to learn how to differentiate food flavors, eat, and digest other foods (24). The preceding examples show that exclusive breastfeeding decisions are influenced by cultural beliefs and role conflict on the part of mothers.

Hygiene practices during infant feeding are a key component that is likely to contribute to health and well-being. In assessing factors that promoted practice of EBF, skilled support from the health workers in hospitals and nutrition workers at the grass-root level helps women establish and maintain exclusive breastfeeding (25). The importance of counseling

and training on breastfeeding has been largely overlooked, presenting a major challenge in managing infant health, especially in low-income countries.

It is a known fact that supplemented milk can lead to inadequate breast milk and malnutrition. A variety of infections, including diarrhea, respiratory infections, and otitis media, can occur secondary to bottle feeding. Formula milk is without any important antibodies that are present in breast milk, that is why it does not provide any protection against infection and illness (26).

In a study conducted in Kwale, about ten percent of the infants were given other feeds before breastfeeding was initiated. More than a third of the infants were breastfed after an hour or more. The reasons given for late initiation of breastfeeding included too much pain for the mother, mother had no milk and baby's sickness. The majority (91.8%) fed the infants with colostrum in the first three days, and the feeding was done on demand (95.4%). About a quarter of the infants were introduced to complementary feeds before six months (19).

EBF practice depends on different aspects, such as the mother's education level and employment status. In a study conducted in Ghana investigating breastfeeding among first-time mothers, first-time mothers who were employed cited their job schedules as a major reason for failure to utilize EBF. The unavailability of the mother as a result of her work schedule could necessitate the introduction of formula. It was realized that though most first time mothers would prefer EBF as taught in ANC clinics, there exist major challenges that limit the ability to breastfeed exclusively (27).

Besides, some of these challenges are fueled by perceptions and myths about breastfeeding. These myths and perceptions include the belief that breastmilk milk becomes polluted when the mother becomes pregnant while still lactating, colostrum being regarded as dirty, the fear of the lactating mother dying because of prolonged breastfeeding, the perception that

breastmilk alone is not sufficient for the baby. Grandmothers, especially the mothers-in-law of breastfeeding women, are significant persons who can influence what to feed the newborn baby (28). Other factors that were considered significant challenges to successful exclusive breastfeeding and effective integration of complementary foods included employment status. Among city-dwelling mothers, EBF was approximately 10% despite 99% awareness of EBF and 91% initiating breastfeeding with the first hour after birth. Some cultural practices such as the giving of water, gripe water, and local herbs also prevent them from reaching the full six months of exclusivity (15).

2.5. Factors influencing utilization of EBF

Breastfeeding present an improved commitment to improved child health and wellbeing. EBF is outlined as a major factor in improving child health, especially in the first six months (29). However, there is a varied understanding of the practice of EBF, which is associated with different factors. Thus, effective practice of EBF has been associated with improved health and positive child development.

According to Tamiru et al. (2013), age, level of educational attainment, employment, parity, family type, and religion significantly influenced the mother's infant feeding practice. A cross-sectional study conducted in Sri Lanka determined that mothers who started complementary feeding before the elapse of 6 months cited employment engagement and the belief that their children were not always satisfied with breast milk alone (29). Similarly, Vietnamese women in a rural setting who had returned to work post-partum were likely to have failed to exclusively breastfeed their children and introduced solid foods to their children much earlier (30). A qualitative study conducted in Tanzania also found parity, employment, religion, and mothers' attitude as essential barriers to EBF.

The type of families has also been investigated, which presents an understanding of its influence on infant feeding practices. According to a study conducted in Nepal, it was revealed that living in joint families was negatively associated with EBF for up to 4 months (31). The living standards have also been a major factor influencing women's ability to breastfeed exclusively and adopt a more detailed understanding of child development. Living in urban areas with good sanitary conditions increased breast milk substitutes before the recommended six months (32). However, there is also an emphasis on adherence to better infant feeding programs among middle and high-income families.

Mother's attitude and perception play a major role in influencing the decision to effectively breastfeed for six months and introduce complementary feeds (14). The perception of insufficient breast milk was a major factor in stopping EBF. Excessive crying of the infant also influenced the mother to decide to introduce complementary feeds (13). Agunbiade and Ogunleye (2012) also found a significant association between crying of an infant and increased use of complementary foods (9). Dearden et al. (2002) reported that women who felt that they had sufficient milk for their infants were significantly more likely to exclusively breastfeed their infants (30).

Antenatal visits present a higher emphasis on the adoption of EBF and the successful introduction of complementary foods. According to Okafor, Olatona, and Olufemi (2013), early cessation of EBF was associated with fewer maternal antenatal visits or nonattendance of formal antenatal clinics at a health facility (33). Besides, Tamiru (2013) reported that mothers who knew the WHO guidelines on breastfeeding were more likely to adhere to the laid down infant feeding protocols (34).

2.5.1. 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 (35). 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 (15).

Mothers are also influenced by the information they receive from healthcare providers during their antenatal visits to healthcare facilities (13). 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 (34). 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 (Elderly mothers are more likely to consider health promotion messages or be exposed to them in different ways (36).

The conceptual framework shows the relationship between variables that are investigated in the study. The independent variables will include the demographic characteristics of the mother which will include age, level of education, marital status, employment and income. Knowledge and practice are other independent variables that are being assessed in the study. The study investigates how these variables affects the ability to practice EBF. Thus, the outcome variable revolves around feeding which is either appropriate or inappropriate based on the key components that have been included in the study.

|

2.3 Conceptual Framework

This study adopted the conceptual framework on determinants of exclusive breastfeeding behavior by Lutter (2000). The framework was customized for this study (Figure 1).

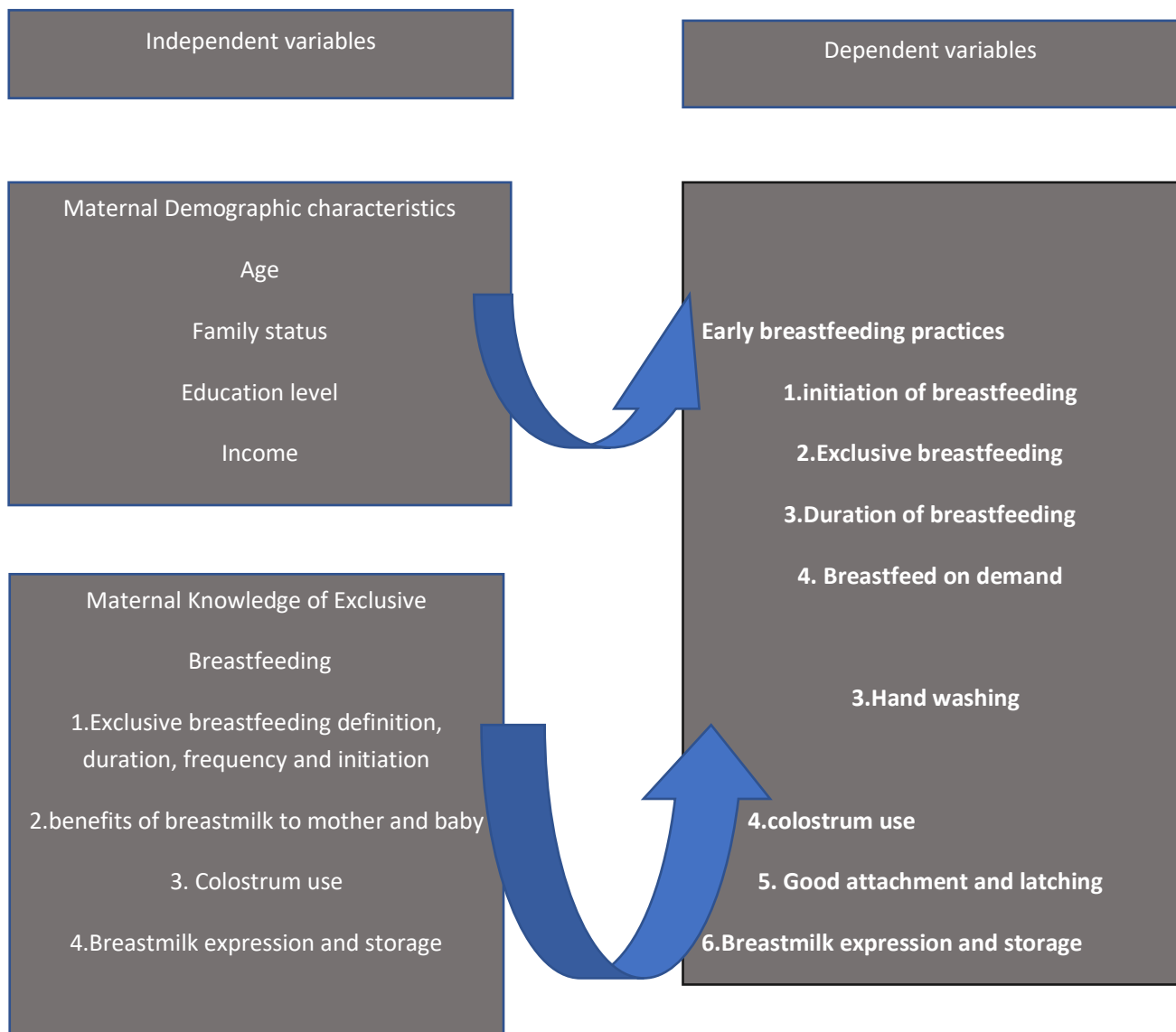


FIGURE 1: CONCEPTUAL FRAMEWORK

2.6.Problem statement

Mothers are required to follow guidelines regarding breastfeeding and complementary feeding, as outlined by the World Health Organization (2). Globally, 38% of infants are exclusively breastfed for up to 6 months. In east Africa, there has been improving exclusive breastfeeding rates and knowledge on the introduction of complementary feeding. Kenya has 61.4% of all mothers who breastfeed exclusively for up to 6 months (12). However, the rate is much lower in first-time mothers. First-time mothers are faced with major challenges concerning child care, which influences their commitment to manage the nutrition level in their children. In a recent study conducted in Wajir, the prevalence of first-time mothers who breastfeed infants exclusively between 0 to 6 months was 39.4% (37).

First-time mothers have been considered as vulnerable and more likely to be influenced by anxiety and ease in receiving information relating to infant feeding. First-time mothers are more accepting of non-scientific health promotion messages received through various sources. Primiparous mothers, compared to multiparous mothers, have been observed to have more challenges in practicing EBF being their first experience (38).

First time mothers are less likely to practice exclusive breastfeeding until six months and less likely to breastfeed for two years and more. They may have difficulties in adjusting to the new role and less breastfeeding skills. Most of the studies that have conducted have focused on demonstrating that multiparity is associated with a high level of efficacy in breastfeeding and complementary feeding adoption for their infant (37)(38). There is limited information on knowledge, and practice on exclusive breastfeeding among first-time mothers. Therefore, this study sought to evaluate the level of knowledge and practice on exclusive breastfeeding among first-time mothers in the Post-natal wards at Kenyatta National Hospital.

2.7. Justification of the study

Nutrition forms a fundamental part of an infant growth. Breast milk is crucial for growth especially the first six months of life (39). Breast milk provides immunologic protection against death from infectious diseases, such as diarrhea, respiratory infections, otitis media, pneumonia, and meningitis. Proper nutrition during this period of rapid growth is vital to ensure that the infant develops both physically and mentally to the fullest potential (40). Knowledge on exclusive breastfeeding is crucial in guiding mothers to make decisions regarding the growth of their children. Introduction of complementary feeding practices among infants within the first six months is necessitated by different aspects such as family influence, work schedules, low milk production and swollen breasts.

First-time mothers are susceptible and accepting, especially when it comes to child care advice, regardless of the source. Such factors are likely to have a negative impact on childcare, particularly in the case of EBF. Understanding first-time mothers' knowledge and behavior is essential in enabling more personalized health education messages to guarantee that the World Health Organization's exclusive breastfeeding recommendations are followed. There has been less focus on exclusive breastfeeding among first time mothers despite their vulnerability and naivety as they assume motherhood for the first time. This study sought to bridge this gap and help improve the health and nutritional state of both the mother and the child, as well as their growth and development.

2.8. Research questions

What is the level knowledge and practices on exclusive breastfeeding among first-time mothers in the post-natal-wards at Kenyatta National Hospital?

2.9.Objectives

2.9.1. Primary Objective

To evaluate the level of knowledge and practices on exclusive breastfeeding among first-time mothers in Post-natal wards at Kenyatta National Hospital.

2.9.2. Secondary Objectives

- i. To identify the social demographic factors associated with exclusive breastfeeding among first time mothers in the post-natal wards at Kenyatta National Hospital.

CHAPTER 3: METHODOLOGY

3.1. Research design

This was a mixed method that adopted both qualitative and quantitative approaches. The mixed method design that was used is the convergent design. The convergent design was initially conceptualized as a “triangulation” design where the two different methods were used to obtain triangulated results about EBF. The purpose of the convergent design was “to obtain different but complementary data on the same topic” to best understand the research problem.

3.2. Study area

The study was carried out in the Post-natal wards at Kenyatta National Hospital. Kenyatta National hospital is the largest referral hospital in Kenya with a bed capacity of 1,800 and approximately 6,000 staff. The hospital is located in Nairobi County in the upper hill region in Kenya. The department of obstetrics has four post-natal wards, mothers post-delivery are admitted to these wards depending on their entry point. The post-natal wards include GFA, GFB 1A and a critical care unit (CCU). On average 25 caesarean delivery and 30 normal deliveries are conducted per day. Most of the post-natal mothers who stay longer than one week have newborns admitted to the New born Unit.

3.3. The study population

The target population included first time mothers in the post-natal wards at Kenyatta National hospital.

3.4. Inclusion and exclusion criteria

3.4.1. Inclusion criteria

- ❖ First-time mothers in the post-natal wards

- ❖ First-mothers with children less than 6 months

- ❖ First time mothers who agree to consent

3.4.2. Exclusion criteria

- ❖ Mothers who are unwell admitted in the Critical Care Unit
- ❖ Mothers with children who were resuscitated after birth
- ❖ Mothers who do not consent.

3.5. Sample size calculation

3.5.1. For quantitative data

According to study conducted by Wekesa et al, in Kwale, it was found that 70% of first-time mothers had knowledge on exclusive breastfeeding and its importance (19).

The study utilized Fischer's formula from sample size calculation where the prevalence of knowledge on exclusive breastfeeding among first time mothers will be 70%. The sample size was calculated as follows

$$n = Z^2Pq/e^2$$

Where n is the sample population,

Z is the abscissa of the normal curve (1.96²),

P is the estimated prevalence (0.7),

q is (1-p) the proportion of an attribute that is absent in the population (0.3),

e is the margin of error included in the study (10%)

$$n = Z^2Pq/e^2$$

$$n = 1.96^2 * 0.7 * 0.3 / 0.1^2$$

$$n = 0.9604 / 0.01$$

$$= 81$$

Thus, when including a 10% non-response, the sample size was 81+8

A sample of 89 first time mothers were recruited into the study.

3.5.2. Sample size for qualitative data

The study included two focus group discussions which included 8 first time mothers each. The focus groups were grouped between young (less than 35 years) mothers and older first-time mothers (greater than 35 years). The two-focus group discussion were efficient in providing accurate information regarding the study objective.

3.6.Sampling

3.6.1. Quantitative data

The study utilized consecutive sampling technique to recruit respondents based on the inclusion criteria.

3.6.2. Qualitative data

A purposive sampling technique was used to recruit participants into the Focus group discussions. The researcher asked whether the subjects are willing to participate, whether they had filled a questionnaire and their age in order to recruit them into one of the two groups.

3.7.Data collection tools

3.7.1 Questionnaire

A questionnaire consisting of both closed and open ended questions was used to collect data on maternal demographic characteristics (maternal age, education level, marital status, and education level) and social economic characteristics, that is: maternal knowledge and practices on exclusive breastfeeding, sources of breastfeeding information, infant feeding practices (41). The open-ended questions were included to gain understanding of why mothers gave a specific answer. Items for the Knowledge and practice of EBF scales of the

questionnaire were adopted from the Food and Agriculture Organization of United Nations (FAO) guidelines for assessing nutrition-related knowledge, attitudes and practices (KAP) manual. This manual contains guidelines that serve as a reference guide and practical tools for undertaking high quality evaluation of nutrition and health related KAP at the community level (42). This manual has a 13 module questionnaires capturing data on important KAP to 13 most common nutrition issues on feeding infants 0-6 months. Based on the aims and objectives of this study, the questionnaire pertaining to feeding infants younger than 6 months was adopted and modified for this study. The FAO questionnaire has been field tested in several countries to ensure validity, readability, ease of administration and less burdensome on respondents (41).

3.7.2 Focused Group Discussion (FGD) Guide

Two focused groups were conducted. One for first time mothers below 35 years, and one group above 35 years. The focus on the 35 years as a cut off was mainly aimed to determine whether there are any differences between early primigravidae and elderly primigravidae. Five themes on knowledge and practices were adopted from the questionnaire and further evaluated in the FGD. Items for the knowledge and Practices of EBF scales of the FGD were developed from the maternal, infant and young child nutrition guidelines in order to elicit the practices on exclusive breastfeeding and adopted in local studies too (43).

3.8. Data collection procedure

3.8.1. Collection of quantitative data

The data collection processes began after approval from KNH-UoN ERC and KNH administration to carry out the study. The researcher with the help of two research assistants engaged the respondents at the Attending post-natal wards on every day. The researcher with the help of research assistants sought to recruit at least five respondents considering that there

are approximately 10 first time mothers in one ward weekly. The selection of participants into the study was done consecutively using the admission register. Only those who meet the inclusion criteria were eligible to participate in the study. The sampling was done consecutively until the sample size is achieved. Every morning the researcher with the help of research assistants approached mothers at the Post-natal wards using details from the admission register and introduce themselves and the purpose of the study. Those mothers who agreed to consent were recruited into the study until the sample size is achieved. The respondents in the study filled the questionnaires were given a unique identifier to ensure that they do not participate in the Focus Group Discussion.

Collection of qualitative data

The participants were assessed to ensure that they did not participate in the quantitative data collection process. The researcher recruited focus group participants from the population that had not have participated in filling the questionnaire. The participants then provided their contacts to the researcher having agreed to participate in the Focus group discussions at a later date to be communicated. The FGD were moderated by the researcher and a note taker documented the proceedings of the session. The session was audio taped and transcribed verbatim to derive meaning. The data collection took approximately 10 weeks.

3.9.Variables in the study

TABLE 1: VARIABLES IN THE STUDY

Variable	Type of variable	Measurement
Independent variables		
Mother characteristics		
• Age	Continuous	Ratio
• Education level	Categorical	Nominal
• Marital status	Categorical	Nominal
• Employment status	Categorical	Nominal
• Income	Continuous	Ratio
Knowledge		

Breastmilk benefits	Categorical	Nominal
• Ways of increasing milk supply	Categorical	Nominal
• Exclusive breastfeeding definition, duration and frequency	Categorical	Nominal
• Expression of milk	Categorical	Nominal
• Milk storage	Categorical	Nominal
Confounders		
Training on EBF	Categorical	Nominal
Dependent/outcome		
Efficacy of infant feeding	Categorical	Nominal

3.10. Data quality control

The questionnaires were serialized to avoid duplication of results. The data was verified on a weekly basis to ensure completeness following collection. Data entry was done continuously basis into a password protected Epidata database.

3.11. Data analysis

Quantitative data was coded, cleaned and analysed using SPSS version 26.0. Descriptive statistics was analysed based on the type of data. Categorical data was analysed using frequencies and percentages and presented in graphs and charts. Continuous data was analysed using Mean (SD).

Question items that were asked in negative connotation were reversed scored (i.e., 1=5, 2= 4, 4=2, and 5=1). A total of 14 questions were used to evaluate knowledge. The sum of the responses was calculated to get the total scores, percentages and mean score. The total scores ranged from 14 to 70. The higher scores reflect more positive breastfeeding knowledge. Based on the correctly answered questions knowledge scores were obtained by summing up all correctly answered questions for each mother. 14 questions on knowledge scored on a 5 point likert scale. The cut off was based on the mean. Those who scored above the mean were considered to have good knowledge level.

Chi squares test and binary logistic regression were used to determine the association between independent and dependent variable include in the study. All statistical tests were interpreted at 5% level of significance. Presentation of this data was done using frequency tables, bar charts and graphs.

The qualitative data was obtained through audio recording were transcribed verbatim and content analysis conducted to derive themes. The transcripts were uploaded to Dedoose and then coded progressively by the Principal investigator and a trained research assistant. They were reviewed through an iterative process using both inductive and deductive approaches to analysis.

3.12. Ethical consideration

Ethical clearance was sought from KNH-UoN Ethics Committee prior to data collection. Participation of subjects will be voluntary bases and written informed consent were obtained from all respondents prior to participation in the study. Confidentiality was maintained at all times. An anonymous study-number were assigned to each study subject. This was the sole identification appearing on the study proforma and questionnaire. The subjects reserved the right to withdraw from the study at any point.

Completed questionnaires were stored securely at all times. These documents were stored for the prescribed duration following conclusion of the study, and were destroyed thereafter. The researcher and the research assistants adhered to all covid-19 guidelines to control cross-infection.

CHAPTER FOUR: RESULTS

4.1.Introduction

The study sought to evaluate the level of Knowledge, practices and demographic factors on exclusive Breastfeeding among First-Time Mothers in post-natal ward at Kenyatta National Hospital. The specific objectives included the level of Knowledge and practice on EBF and the demographic factors associated with EBF among first time mothers in post-natal ward at Kenyatta National Hospital. A sample of 89 first time mothers at the post-natal wards was sought where all the respondents were completed and filled the questionnaires appropriately and were included in the analysis.

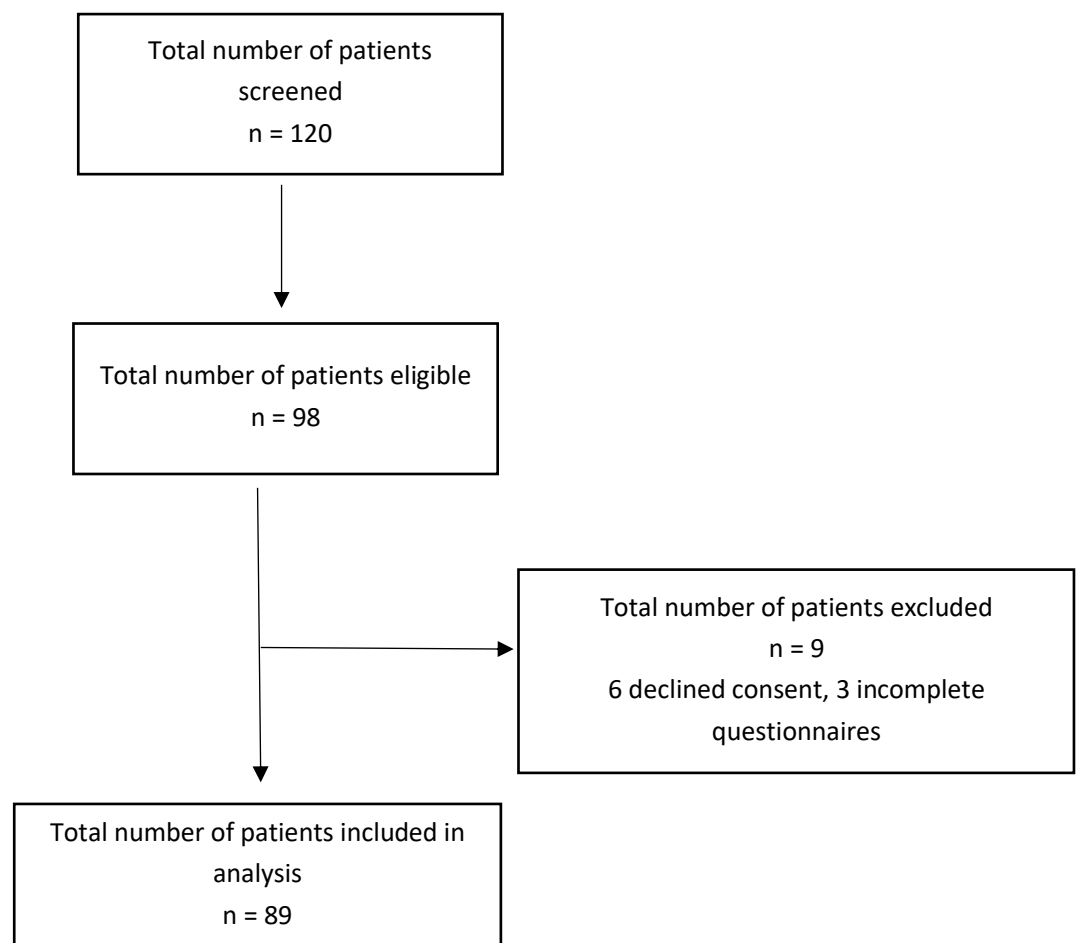


FIGURE 2:STUDY FLOWCHART

4.2. Demographic characteristics of first-time mothers in Post-natal wards at Kenyatta National Hospital

The findings from the analysis revealed, 70.8% (n =63) were aged below 35 years, 59.6% (n =53) were married. In investigating education level, 53.9% (n =48) had secondary level education, employment status analysis showed that 68.7% (n =54) were unemployed as shown in Table 2.

TABLE 2: DEMOGRAPHIC CHARACTERISTICS OF FIRST-TIME MOTHERS IN POST-NATAL WARDS AT KENYATTA NATIONAL HOSPITAL

Demographic characteristics	Frequency	Percent
Age of the respondent		
<35 years	63	70.8
=>35 years	26	29.2
Marital status		
Single	36	40.4
Married	53	59.6
Education level		
No formal education	1	1.1
Primary	3	3.4
Secondary	48	53.9
Tertiary	37	41.6
Employment status		
Formal employment	18	20.2
Self-employment	17	19.1
Unemployed	54	69.7

4.3. Level of Knowledge on Exclusive Breastfeeding practice among first time mothers in post-natal ward at Kenyatta National Hospital.

Knowledge components rating scores were measured using a five-point Likert scale where 1 = Strongly disagree (SD), 2= Disagree (D), 3 =Neutral (N), 4 =Agree (A) and 5= Strongly agree (SA). The findings established that 92.1% (n =82) of the respondents knew that breast milk can be expressed for later use 91% (n =81) of the respondents knew that a baby should be put on the breast within one hour after delivery. Further the findings also revealed that, 87.6% (n =78) of the respondents knew that colostrum is highly nutritious to the baby, 86.5% (n =77) had knowledge that the benefits of EBF last even longer than the baby has stopped breastfeeding. The findings also revealed that 71.9% (n=64) knew that breast milk supply can be sustained by having good nutrition as shown in Table 3.

TABLE 3:KNOWLEDGE COMPONENTS RATING SCORE AMONG THE RESPONDENTS

<i>Knowledge component</i>	SD (1)	D (2)	N (3)	A (4)	SA(5)
Breast milk should be the new-born’s first food after a safe delivery	6(6.7)	5(5.6)	5(5.6)	19(21.3)	54(60.7)
Infant’s should be put to breast within one hour of birth	5(5.6)	3(3.4)	0	10(11.2)	71(79.8)
The baby should be breastfed on demand	6(6.7)	0	2(2.2)	0	81(91)
Breast milk only is sufficient for the baby for the first 6 months	1(1.1)		11(12.4)	23(25.8)	54(60.7)
Frequent breast feeding helps to increase the production of breast milk	4(4.5)	11(12.4)	0	5(5.6)	69(77.5)
Breast milk supply can be sustained by having good nutrition/eating well	9(10.1)	10(11.2)	6(6.7)	0	64(71.9)
In times of absence the baby can continue to exclusive breastfed by expressing breast milk and storing		7(7.9)	0	0	82(92.1)
First milk (colostrum) is very nutritious to the baby	9(10.1)	2(2.2)	0	0	78(87.6)
It is important to give the baby some water, honey and other solid foods during the first six months after birth.	38(42.7)	23(25.8)	26(29.2)	0	2(2.2)
Health personnel can assist in overcoming breastfeeding difficulties	0	0	0	38(42.7)	51(57.2)
The benefits of breastfeeding last even after the baby has stopped breastfeeding	0	0	0	12(13.5)	77(86.5)
Breastfeeding is good for both infant and the mother	10(11.2)			61(68.5)	18(20.2)
Exclusive breastfeeding is giving the child breast milk only for the first 6 months	2(2.2)	11(12.4)	8(9)	29(32.6)	39(43.8)
Breastfeeding should be stopped during mother’s illness.	0	0	0	76(85.4)	13(14.6)

4.3.1. The level of knowledge

The results show that the mean score was 61 while minimum score was 43 and maximum score was 68 as shown in Table 4.

TABLE 4: KNOWLEDGE AMONG RESPONDENTS

	Minimum	Maximum	Mean
Knowledge scores	43	68	61.08

Level of Knowledge

The study sought to investigate the level of knowledge among first time mothers on EBF. The level of knowledge was assessed based on knowledge scores from the 5-point Likert scale which contained 14 questions. The total scores ranged between 14 and 70. The level of knowledge was assessed using the average score where respondents who scored above the mean were deemed to have good knowledge. It was found that, 73% (n =65) had good knowledge on EBF while 27% (n =24) reported poor level of knowledge as shown in Figure 3.

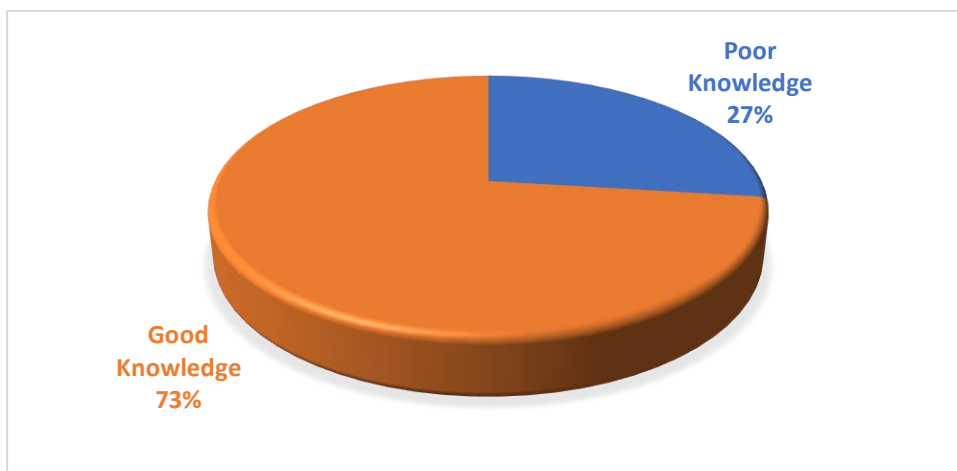


FIGURE 3 LEVEL OF KNOWLEDGE

4.3.2. Qualitative analysis on Knowledge

Focus group discussions were also conducted where participants were asked questions about breastfeeding. In assessing knowledge, the main themes were Definition of EBF, Sources of information about EBF and Benefits of EBF.

Source of information on child feeding and care

Among the FGD including women aged less than 35 years, majority of them received information on child feeding and care in health facilities from healthcare professionals. One of the participants stated that, *“I received information about breastfeeding when I went for*

my clinic visits. The nurse there explained to me so well about what I need to do when I deliver” (FGD1, participant 2). Another one stated that, “I received information about breastfeeding when my baby was in nursery, I was unable to feed the baby properly and the nurse who was there assisted me” (FGD1, Participant 4). Another one stressed that, “There were community health workers who came to my village and taught use about taking care of our babies” (FGD1, Participant 6).

Among the FGD including women aged above 35 years, majority of them stated that they heard about breastfeeding and care from their friends and the media. One of the participants asserted that, *“I learned much about breastfeeding from my friends who have children because I used to stay around them most times when they were breastfeeding” (FG2, Participant 3).* Another one stated that, *“There are various media programs as well as the internet which have been very helpful in understanding about breastfeeding and taking care of my baby” (FGD 2, Participant 5).*

Definition of exclusive Breastfeeding

The findings from the FGDs revealed that most of women knew what exclude breastfeeding entails . One of the participants in the FGD 1 including women aged less than 35 years asserted that, *“It is giving baby breast milk up to six months without water but syrups given in hospitals are accepted” (FGD1, Participant 1).* Another one noted that, *“Exclusive breastfeeding is giving the baby breast milk only but my baby also received oral vaccine’s and multi vitamins which I think are okay ” (FGD 1, Participant 3).*

In FGD 2 including women above 35 years, most of them knew about exclusive breastfeeding especially the time which is six months but some of them were unsure of what constitutes exclusive breastfeeding as far as introduction of other feeds is concerns. One of

them noted that, *“I know that EBF is a six-month period without introducing any extra feeds although I am not sure whether giving the baby, water still is EBF”*(FGD 2, Participant 6).

The benefits of exclusive breastfeeding

The findings from the FGD revealed most mothers were conversant with the benefits of EBF to the baby rather than to the mother, one stated that *“Breastmilk has all the nutrients an infant requires, it is not contaminated and will make the child grow well as required”*(FGD1, participant 2)

Another mother stated that that *“breastfeeding has made me bond with my preterm baby”*(FGD 2, participant 1) Another one stated that *“ I Am not sure if it has contributed to the lack of menstration”*(FGD 2, participant 6) and one was sure that *“it is cheap to breastfeed since I don’t buy it like formula milk and makes the baby not to have diarrhea”*

4.4. Level of practice on exclusive Breastfeeding among first time mothers in post-natal ward at Kenyatta National Hospital.

The respondents were asked questions regarding their practice revolving around exclusive breastfeeding. The results established that, 76.4% (n =68) stated that they started breastfeeding within one hour after delivery, 53.9% (n =48) identified that their babies had not received anything before milk, 94.4% (n =84) stated that their babies had received colostrum. Majority of the respondents, 65.2% (n =58) stated that they had not introduced other feeds and those who received pre-lacteal feeds majority had given formula feeds, 88.8% (n =79) of the respondents stated that they always washed their hands with soap before breastfeeding. Regarding expression of milk, 53.8% (n =47) stated that they were expressing

milk with reasons being that the baby was unable to suckle. 95.5%(n=85) knew how to position the baby before breastfeeding as shown in Table 4.

FIGURE 4: PRACTICES ON EBF AMONG FIRST TIME MOTHERS

Practices	Frequency	Percent
Initiate breastfeeding		
Within one hour after birth	68	76.4
One hour after birth	16	18.0
After one day after birth	5	5.6
Frequency of breastfeeding		
On demand	41	46.1
Scheduled	48	53.9
Received colostrum		
Yes	84	94.4
No	5	5.6
Received pre-lacteal feeds		
Yes, if yes, was it formula?	31	34.8
No	58	65.2
Wash hands with soap before breastfeeding		
Yes	79	88.8
No	10	11.2
Have you ever expressed breast milk for later use		
Yes	47	53.8
No	42	47.2
Know how to position baby when breastfeeding		
Yes	85	95.5
No	4	4.5

4.4.1. Qualitative analysis on Practice

The major themes addressed were what the mothers did when they wanted to breastfeed and how to express and store Breastmilk.

What do you do when you want to breastfeed

The practice of hand washing was emphasized across all the two FGD. One of the young mothers stated that “ *I Wash my hands with water,squeeze some little milk out then breastfeed*”(FGD 1,participant 2)

Another older mother stated that “ *I Wash my hands, sit comfortable,wake the baby up untill the mouth is open then breastfeed*”(FGD 2, participant 7)

Similar thoughts from one of the mothers in the second group, she stated that “ *I Wash my hands, put the baby close to me, awake her, and put all the nipple in the mouth*”(FGD 2, participant 8)

Have you ever expressed and stored breast milk? why and how did you do it?

Majority of the mothers had ever expressed breast milk for later use, it was a common practice among the mothers with preterm babies who for one reason could not breastfeed.

One of the mothers with a preterm stated that “ *while In nicu, I expressed for my premature baby, to a small cup left it for the nurses to feed my baby*”(FGD 1, participant 1) another mother stated that “*My baby could not suck well, I expressed in a cup and fed via feeding tube*”(FGD 2, participant 7) . Even in times of absence the baby had continued to exclusively breastfeed as stated by one mother “*I had to go for dialysis, I expressed into a cup and left for the nurse to feed my baby*”. (FGD 2, participant 5)

4.5. Demographic Factors associated with breastfeeding and complementary practice among first time mothers in post-natal ward at Kenyatta National Hospital

The study sought to investigate demographic factors associated with exclusive breastfeeding among first time mothers as shown in Table 5. The results found that that education level, OR =2.11, 95%CI: 1.34 -3.69, p = 0.032) and knowledge level, OR =8.0, 95%CI: 2.8 -22.6, p = 0.048) were significantly associated with practice.

TABLE 5: DEMOGRAPHIC FACTORS ASSOCIATED WITH EXCLUSIVE BREASTFEEDING PRACTICE

Factors	Practice		OR (95%CI)	P-value
	Good n (%)	Poor n (%)		
Age of the mother				
Less than 35 years	40(63.5)	23(36.5)	0.61(0.23 - 1.31)	0.39
=>35 years	15(57.7)	11(42.3)	Ref	
Marital status				
Single	22(61.1)	14(38.9)	1.21(0.45 - 2.11)	0.543
Married	33(62.3)	20(37.7)	Ref	
Education level				
No formal education	0	1(100)	Ref	0.328
Primary	3(100)	0	0.91(0.23 - 1.56)	
Secondary	28(58.3)	20(41.7)	1.21(1.01 - 2.31)	
Tertiary	24(64.8)	13(35.2)	2.11(1.34 -3.69)	
Employment status				
Formal employment	9(50)	9(50)	0.87(0.53 - 1.31)	0.445
Self-employment	11(64.7)	6(35.3)	1.33(0.98 - 2.21)	
Unemployed	34(64.2)	19(35.8)	Ref	
Knowledge level				
Good Knowledge	51(78.3)	5(21.7)	8(2.8, 22.6)	0.048
Poor Knowledge	37(56.1)	29(43.9)	Ref	

CHAPTER FIVE: DISCUSSION

5.1. Discussion

The study investigated knowledge and practice on exclusive breastfeeding among first time mothers. The findings from the analysis showed that, majority of the respondents were aged below 35 years. The average age was 27 years. Most of first-time mothers are young adults although in the present study, 29.2% were first time mothers aged above 35 years. These findings are comparable to a study conducted in Yemeni by Dallak et al. (44) who found that the average age of first time mothers was 27 years. However, contrast those from Intiful et al.(45) in Ghana in 2017 who conducted a cross sectional study which revealed that the average maternal age was 24 years. This difference could be explained by the high prevalence of early marriages in Ghana as compared to Kenya. According to Ahonsi et al. (46), 1 in 5 girls who are aged between 20 and 24 years are married before the age of 18 in Ghana. Similarly, most of deliveries occur between 20 and 28 years of maternal age. The findings from the present study have showed that 59.6% were married. These findings however, differ from a study conducted in Kwale county by Talbert et al. (37) who found that majority of the participant were adolescent and 65% were unmarried. The difference could be explained by the setting in which the studies have been conducted. Their study was a community-based study based in rural Kwale county compared to our present study which has been conducted in an urban setting hence the difference in the demographics. More than half of respondents in our present study had secondary level education. These findings are comparable to past studies Dallak et al (44) and Intiful et al. (45) who found that majority of the respondents in their studies had secondary level of education. Although the findings contrast those from Talbert et al. (37) who identified that majority of the respondents in their study had primary level of education. This was mainly because most of the respondents had dropped out of school due to pregnancy.

The findings from the present study showed that 73% of the respondents had high level of knowledge on exclusive breastfeeding. This study was conducted in a hospital setting, hence the likelihood that the mothers received education about exclusive breastfeeding either antenatal wards or post-natal wards is high. These findings were higher compared to a study conducted in India by Karnawat et al. (47) which revealed that 61% of mothers had good knowledge on exclusive breastfeeding. The difference could be as a result of the study setting and the target population. In our study we focused on post-natal wards targeting first time mothers who had babies less than six months. However, in their study, the targeted rural and urban first-time mothers at outdoor paediatric department. A study conducted in Yemen by Dallak et al. (44) found that 47% of the mothers had moderate level of knowledge while 30% had low level of knowledge with 22.5% of the mothers reporting high level of knowledge.

In our present study, 82% of the mothers knew that initiation of breastfeeding should begin within one hour after delivery. This findings were higher than those from a study conducted in Kwale County which revealed that 61% of mothers knew that initiation of breastfeeding should begin within an hour after delivery (19). Dallak et al. also revealed that 61% of the respondents knew that breastfeeding is supposed to be initiated within one hour after delivery. In our current study, 71.9% of the respondents cited that they knew how to position the baby during breastfeeding. However these findings are lower as compared to a study conducted in Yemen by Dallak et al. (44) who found that the highest correct responses (96.0%) were regarding the "Mothers ideal body position for breast feeding." Further the findings from our study revealed that 86.5% of mothers in our study knew that exclusive breastfeeding takes 6 months. Our findings are higher than many of past studies which have reported relatively lower level of knowledge on exclusive breastfeeding and positioning of the baby during breastfeeding (48) (46). In this study it appeared that the participants were

more conversant with the benefits of EBF to the child than to the mother. Intifal et al (2017) noted that the benefits of EBF had some gaps. Some of the expectant first time mothers were conversant with some of the importance of breastfeeding to the baby. However, knowledge of the benefits of breastfeeding to the mother was minimal.

In assessing practice, the current study revealed that 76% of the respondents began breastfeeding within the first hour of safe delivery. These findings contrast those from Dallak et al who found that only 36% of the mothers managed early initiation to breastfeeding (44). In their study, it was established that early initiation was associated with knowledge. Our present findings have also showed a significant association between knowledge and practice. Thus, mothers who had high level of knowledge were able to initiate early breastfeeding. The findings from the present study have also showed that 94% of the mothers asserted that their babies had received colostrum. Colostrum is very nutritious and contains high level of antibodies, World Health Organization recommends early initiation of breastfeeding to ensure that the infant receives colostrum. The findings from our study also showed that 88.8% of the mothers wash their hands prior to breastfeeding which is a recommended practice. In this study, majority of the mothers reported having received information on infant feeding from health care providers while a few from close family members and mobile apps. The trend of receiving information from female relatives and friends is similar to that of a study carried out in Kilifi that reported that married first time mothers felt obliged to follow their mother-in-law's advice to maintain good relationship and respect (24).

5.2. Strength and Limitation of the study

Strengths of the study

- The items of the questionnaire of this study have been previously validated improving the credibility of our findings.

- The study has included both qualitative and quantitative approaches which have increased understanding on the concept of exclusive breastfeeding among first time mothers.

Limitations of the study

- The study was conducted in a hospital setting and the findings may not be generalisable to first time mothers within community settings.
- The study targeted postnatal mothers hence it was unable to effectively assess the practice of exclusive breastfeeding fully.

CHAPTER SIX: CONCLUSION AND RECOMMENDATION

6.1. Conclusion

The findings from the study have showed that, 70.8% were aged below 35 years, 59.6% were married, 53.9% had secondary level education, employment status analysis showed that 68.7% were unemployed. The scores for knowledge ranged from 14 to 70. The mean score was 61 with minimum score of 46 and maximum score of 68. The level of positive knowledge was 73%. The results established that, 91% of the respondents knew that a baby should be put on the breast within one hour after delivery, 87.6% of the respondents knew that colostrum is highly nutritious to the baby, 86.5% had knowledge that a baby should be introduced to other foods after six months of exclusive breastfeeding. The findings also revealed that 82% of the respondents knew that breast milk should be given to the baby immediately after safe delivery, 71.9% asserted that they know good positioning therefore effective breastfeeding. In investigating practice, 76% of the respondents started breastfeeding within one hour after safe delivery, 94.4% of the respondents asserted that their babies had received colostrum while 53.8% stated that they were expressing milk with reasons being that the baby was unable to suckle. There was a positive effect of mother's education level on knowledge and practice of EBF in these mothers.

6.2. Recommendations

- Healthcare providers should educate mothers about the benefits of exclusive breastfeeding to both infant and mother at the Antenatal Clinics to ensure they are well aware and prepared.
- Healthcare providers should train mothers on best breastfeeding practices to improve the quality of breastfeeding and improve infant growth.
- Promote breast milk expression among mother's as a way to ensure the baby received breast milk even if the mother is absent.

REFERENCES

1. Vijayalakshmi P, Susheela, D. M. Knowledge, Attitudes and Breast Feeding Practices of Postnatal Mothers: A Cross Sectional Survey. *Int J Health Sci (Qassim)*. 2015 Oct;9(4):364.
2. WHO. World Health Organization. Coronavirus disease 2019 (COVID-19). *Situation Report*, 32. 2020 Jun (3)7:8-9.
3. Leahy-Warren P, Mulcahy H, Phelan A, Corcoran P. Factors influencing initiation and duration of breast feeding in Ireland. *Midwifery*. 2014 Mar 1;30(3):345-52.
4. Cai X, Wardlaw T, Brown DW. Global trends in exclusive breastfeeding. *Int Breastfeed J*. 2012 Dec;7(1):1-5.
5. Couto GR, Dias V, Oliveira I de J. Benefits of exclusive breastfeeding: An integrative review. *Nursing Practice Today*. 2020 Feb (2):34-7.
6. Ávila-Ortiz MN, Castro-Sánchez AE, Martínez-González EA, Núñez-Rocha GM, Zambrano-Moreno A. Factors associated with abandoning exclusive breastfeeding in Mexican mothers at two private hospitals. *Int Breastfeed J*. 2020; (2)63-77.
7. Kebede T, Woldemichael K, Jarso H, Bekele BB. Exclusive breastfeeding cessation and associated factors among employed mothers in Dukem town, Central Ethiopia. *Int Breastfeed J*. 2020 Dec 1;128(6):1117-25.
8. Motee A, Jeewon R. Importance of exclusive breast feeding and complementary feeding among infants. *Curr Res Nutr Food Sci*. 2014;2(2):56–72.
9. Agunbiade OM, Ogunleye O V. Constraints to exclusive breastfeeding practice among breastfeeding mothers in Southwest Nigeria: Implications for scaling up. *Int Breastfeed J*. 2012; 2(2):56–72.
10. Patil CL, Turab A, Ambikapathi R, Nesamvuni C, Chandyo RK, Bose A, et al. Early interruption of exclusive breastfeeding: Results from the eight-country MAL-ED study. *J Heal Popul Nutr*. 2015; 29(1):1–8.
11. Mohamed MJ, Ochola S, Owino VO. Comparison of knowledge, attitudes and practices on exclusive breastfeeding between primiparous and multiparous mothers attending Wajir District hospital, Wajir County, Kenya: A cross-sectional analytical

- study. *Int Breastfeed J.* 2018; 2(8): 7-9.
12. Talbert AW, Tsofa B, Mumbo E, Berkley JA, Mwangome M. Knowledge of, and attitudes to giving expressed breastmilk to infants in rural coastal Kenya; focus group discussions of first time mothers and their advisers. *Int Breastfeed J.* 2018;13(1):1–7.
 13. Dede KS, Bras H. Exclusive breastfeeding patterns in Tanzania: Do individual, household, or community factors matter? *Int Breastfeed J.* 2020; 13(1):1–7.
 14. Asare BYA, Preko JV, Baafi D, Dwumfour-Asare B. Breastfeeding practices and determinants of exclusive breastfeeding in a cross-sectional study at a child welfare clinic in Tema Manhean, Ghana. *Int Breastfeed J.* 2018 Apr;7(1):1-0.
 15. Shi H, Yang Y, Yin X, Li J, Fang J, Wang X. Determinants of exclusive breastfeeding for the first six months in China: a cross-sectional study. *Int Breastfeed J.* 2021 Dec;9(1):1-6.
 16. Theodorah DZ, Mc'Deline RN. “The kind of support that matters to exclusive breastfeeding” a qualitative study. *BMC Pregnancy Childbirth.* 2021; 2(5);221-6.
 17. Wan H, Tiansawad S, Yimyam S, Sriaporn P. Factors Predicting Exclusive Breastfeeding among The First Time Chinese Mothers. *Pacific Rim Int J Nurs Res.* 2015 Dec 1;128(6):1117-25.
 18. Nor B, Ahlberg BM, Doherty T, Zembe Y, Jackson D, Ekström EC. Mother’s perceptions and experiences of infant feeding within a community-based peer counselling intervention in South Africa. *Matern Child Nutr.* 2012 Dec 1;128(6):17-9.
 19. Wekesa NM, Makokha A, Wanjihia V, Lihana R. Infant Feeding Knowledge and Practices Among Lactating Mothers in Kwale County , Kenya. 2017;(October).
 20. Shazia Samad Mohsin, Abdul Sattar Shaikh, Rehana Shaikh, Nighat Haider, Arit Parkash. Knowledge Attitude and Practices of Mothers regarding Complementary Feeding. *J Dow Uni Heal Sci.* 2014; Sep 24;366(9491):1094-100.
 21. Tadele N, Habta F, Akmel D, Deges E. Knowledge, attitude and practice towards exclusive breastfeeding among lactating mothers in Mizan Aman town, Southwestern Ethiopia: Descriptive cross-sectional study. *Int Breastfeed J.* 2016 Dec;9(1):1-6.

22. Asiodu I V., Waters CM, Dailey DE, Lee KA, Lyndon A. Breastfeeding and Use of Social Media Among First-Time African American Mothers. *JOGNN - J Obstet Gynecol Neonatal Nurs.* 2015 Apr;7(1):1-0.
23. Sutherland T, Pierce CB, Blomquist JL, Handa VL. Breastfeeding practices among first-time mothers and across multiple pregnancies. *Matern Child Health J.* 2012 Apr 1;113(4):e283-90.
24. World Health Organization (WHO). Implementation Guidance Protecting, promoting and supporting breastfeeding in facilities providing maternity and newborn services—the revised baby-friendly hospital initiative. Making EHS an Integral Part of Process Design. 2018 Aug 3;56(30):760-3.
25. Mohamed MJ, Ochola S, Owino VO. A Qualitative Exploration of the Determinants of Exclusive Breastfeeding (EBF) Practices in Wajir County, Kenya. *Int Breastfeed J.* 2020 May 1;29(5):506-18.
26. Pérez-Escamilla R, Buccini GS, Segura-Pérez S, Piwoz E. Perspective: Should Exclusive Breastfeeding Still Be Recommended for 6 Months? *Advances in Nutrition.* 2019 Aug 1;6(4):209-13.
27. Danso J. Examining the Practice of Exclusive Breastfeeding among Professional Working Mothers in Kumasi Metropolis of Ghana. *Int J Nurs.* 2014 Jan 1;6(4):319-13.
28. Kronborg H, Harder I, Hall EOC. First time mothers' experiences of breastfeeding their newborn. *Sex Reprod Healthc.* 2015 Mar 1;12(2):260-7.
29. Abuidhail J, Al-Modallal H, Yousif R, Almresi N. Exclusive breast feeding (EBF) in Jordan: Prevalence, duration, practices, and barriers. *Midwifery.* 2014 Jun;50(5):479-88.
30. Dearden KA, Quan LN, Do M, Marsh DR, Pachón H, Schroeder DG, et al. Work outside the home is the primary barrier to exclusive breastfeeding in rural Viet Nam: Insights from mothers who exclusively breastfed and worked. *Food Nutr Bull.* 2002 Feb;21(3-4):388-97.
31. Ulak M, Chandyo RK, Mellander L, Shrestha PS, Strand TA. Infant feeding practices in Bhaktapur, Nepal: A cross-sectional, health facility based survey. *Int Breastfeed J.*

- 2012 Jul 1;30(4):251-5.
32. Balogun OO, Dagvadorj A, Anigo KM, Ota E, Sasaki S. Factors influencing breastfeeding exclusivity during the first 6 months of life in developing countries: A quantitative and qualitative systematic review. *Matern Child Nutr.* 2015;11(4):433–51.
 33. Okafor I, Olatona F, Olufemi O. Breastfeeding practices of mothers of young children in Lagos, Nigeria. *Niger J Paediatr.* 2013 Jul 1;30(4):251-5.
 34. Tamiru D. Introduction of Complementary Foods to Infants within the First Six Months and Associated Factors in Rural Communities of JimmaArjo. *Int J Nutr Food Sci.* 2013 Jul 1;30(4):251-5.
 35. Acheampong AK, Ganga-Limando M, Aziato L. Perceived enablers of exclusive breastfeeding by teenage mothers in Ghana. *South African Fam Pract.* 2020 May;31(3):349.
 36. Dukuzumuremyi JPC, Acheampong K, Abesig J, Luo J. Knowledge, attitude, and practice of exclusive breastfeeding among mothers in East Africa: A systematic review. *International Breastfeeding Journal.* 2020 May;31(3):349.
 37. Talbert A, Jones C, Mataza C, Berkley JA, Mwangome M. Exclusive breastfeeding in first-time mothers in rural Kenya: A longitudinal observational study of feeding patterns in the first six months of life. *Int Breastfeed J.* 2020 Jan;24(1):71.
 38. Talbert AW, Ngari M, Tsofa B, Mramba L, Mumbo E, Berkley JA, et al. “When you give birth you will not be without your mother” A mixed methods study of advice on breastfeeding for first-time mothers in rural coastal Kenya. *Int Breastfeed J [Internet].* 2016;11(1):1–9. Available from: <http://dx.doi.org/10.1186/s13006-016-0069-6>
 39. Nishimura H, Krupp K, Gowda S, Srinivas V, Arun A, Madhivanan P. Determinants of exclusive breastfeeding in rural South India. *Int Breastfeed J.* 2018 Nov;100(4):594.
 40. Tampah-Naah AM, Kumi-Kyereme A, Amo-Adjei J. Maternal challenges of exclusive breastfeeding and complementary feeding in Ghana. *PLoS One.* 2019 Feb;15(1):110-29.
 41. Macias YF, Glasauer P. Guidelines for assessing nutrition-related Knowledge, Attitudes and Practices manual. FAO. Food and Agriculture Organization of the

United Nations. 2014 Feb;15(1):110-29.

42. Faustsh Macías Y, Glasauer P. Guidelines for assessing nutrition-related Knowledge, Attitudes and Practices. KAP manual. FAO. 2014 Nov 1;32(6):368-74.
43. Manyeh AK, Amu A, Akpakli DE, Williams JE, Gyapong M. Estimating the rate and determinants of exclusive breastfeeding practices among rural mothers in Southern Ghana. *Int Breastfeed J*. 2020 Nov 1;32(6):368-74.
44. Dallak AM, Al-Rabeei NA, Aljahmi YA. Breastfeeding Knowledge, Attitude, and Practices among Mothers Attending Health Centers in Sana'a City. *ARC J Public Heal Community Med*. 2016 Jan;43(1):1.
45. Intiful F, Osei C, Steele-Dadzie R, Nyarko R, Asante M. Views of First-Time Expectant Mothers on Breastfeeding: A Study in Three Health Facilities in Accra, Ghana. *Adv Public Heal*. 2017;2017:1–6.
46. Ahonsi B, Fuseini K, Nai D, Goldson E, Owusu S, Ndifuna I, et al. Child marriage in Ghana: Evidence from a multi-method study. *BMC Womens Health*. 2019 Apr 1;2(2):83-9.
47. Karnawat BS, Divya ` , Karnawat D, Joshi A, Kohli GK. Knowledge, attitude & practices about infant feeding among mothers of urban & rural areas of Ajmer district. *J Med Res*. 2015 Feb;27(3-4):640-9.
48. Suhag Abdul Hadi, Akter M. Mothers' Knowledge, Attitude and Practice about Infant Feeding and Weaning Food in Sylhet: An Empirical Study. *Saudi J Nurs Heal Care*. 2020 May;9(3):361-74.

APPENDICES

Appendix I: Consent Form

The Study Title: **FIRST-TIME MOTHER'S KNOWLEDGE ATTITUDE PRACTICE ON BREASTFEEDING AND COMPLEMENTARY FEEDING PRACTICES. A CASE STUDY OF MOTHERS ATTENDING POST NATAL CLINIC AT KENYATTA NATIONAL HOSPITAL**

Introduction

My name is Dr. Priscilla Kashero, a student at University of Nairobi, Department of Paediatrics and Child Health. I am carrying out a study on **“First-time mother's knowledge attitude practice on breastfeeding and complementary feeding practices. A case study of mothers attending post-natal clinic at Kenyatta National hospital.**

Participation in the study

Your participation in this study will be on a voluntary basis, and you may decide to withdraw from the study at any stage without any penalty. The study is purely descriptive, non-invasive, and will not attract any cost to your part.

Study Approval

This study is being conducted with the approval of the UoN Department of Pediatrics and Child Health and KNH-UoN Ethics and Review Committee. Approval No.....

Study Procedure

I, the principal investigator, together with my research assistants, will give you a full explanation of the procedure before you participate in this study. You will be required to answer the questions as asked in the questionnaire. The research assistants will help in making any clarifications regarding the questions. The completion of this questionnaire will take approximately 10 minutes of your time.

Confidentiality

Your identity will be protected with utmost confidentiality during the study. There are no identifiers that you will provide.

Risks and or discomforts

There are no known risks in the participation in the study. You are encouraged to discuss any discomfort or distress with the research assistant openly.

Benefits during the study

There will be no monetary benefit to you for participating in the study but the results

Although you will be taught on key aspects relating to breastfeeding and improving the quality of health of yourself and your Child.

Harm during the study

The study is purely descriptive and will not cause any physical harm to you.

Communication

In case of any clarifications or queries during and after the study, you are free to contact me

the principal investigator on the telephone at 0712197079 or email me at pkashero1@gmail.com.

Thank you

Signature

(Participant) Date.....

I confirm that I have clearly explained to the participant the nature of the study and the contents of this consent form in detail, and the participant has decided to participate voluntarily without any coercion or undue pressure.

Signature (Researcher).....Date.....

Appendix II: Questionnaire

Section A: Mother's bio data

1. Mother's age (years).....

2. Marital status:

Single..... Married Separated.....divorced.....Widowed.....

3. Mothers religion:

Christian..... Muslim..... Others (Specify).....

5. What was the highest educational level you attained?

No formal education..... Primary education.....

Secondary education.....Tertiary education.....

6. Employment status

Employed (formal) Employed (self)..... Unemployed.....

Section B: Knowledge on exclusive Breast Feeding

	Statement	Strongly Agree	Agree	Undecided	Strongly Disagree	Disagree
1	Breastmilk should be the newborns first food after a safe					
2	Infant's should be put on the breast within 1 hour after a safe delivery					
3.	The baby should be breastfeed on demand					

4.	Breast milk only is sufficient for the baby for the first six months					
5.	Frequent breastfeeding helps to increase production of breast milk					
6.	Breastmilk supply can be sustained by having good nutrition/eating well					
7.	In times of absence the baby can continue to exclusive breastfeed by expressing breastmilk and					
8	First milk (colostrum) is very nutritious to the baby					
9	It is important to give the baby some water, honey and other solid foods during the first six months					
10	Health personnel can assist in overcoming breastfeeding					
11	The benefits of breastfeeding last even after baby has stopped					
12	Breastfeeding is good for both infant and the mother					
13	Exclusive breastfeeding is giving the child breast milk only for the					
14	Feeding should be stopped during illness.					

Section D: Practices on Breastfeeding and complementary feeding

1. When did you initiate breastfeeding?

Within one hour after birth.....After one hour following birth.....

After one day after birth.....Doesn't know/Not sure.....

Other (Specify).....

2. Did your baby receive anything else before receiving breast-milk (any food or liquid other than breast milk)?

a) Yes.....was it formula milk? Medications? Others?

b) No.....

If yes, specify

3. Did the baby receive the first milk (colostrum)?

a) Yes.....

b) No.....

4. How frequent do you breastfeed your baby?

a) On demand

b) Regularly

c) Randomly

d) Scheduled

5. Do you wash your hands with soap before feeding the baby?

a) Yes

b) No.....

6. Have you ever expressed breast milk for later use

a) Yes

b) No.....

7. The baby should be well positioned, skin to skin, mouth wide open and well aligned before initiating breastfeeding?

a) Yes No

Appendix III: Focus Group Discussion Guide

1. Do you know what exclusive breastfeeding entails?
2. Where did you learn about exclusive breastfeeding?
3. What are the benefits of exclusive breastfeeding?
4. What do you do when you want to breastfeed?
5. Have you ever expressed and stored breast milk and why? How did you do it?

Appendix V: Study Budget

The following is the expected budget for the study

Category	Remark	Unit	Unit cost	Total (Kshs)
Proposal development	Printing drafts	1000	5	5000
	Proposal copies	1000	8	8000
Data collection	Stationary	400	10	4000
	Training research assistants	4	1500	4500
	Research assistant	5 weeks	1500	112500
Data entry	Data clerk	1	7000	7000
Data analysis	Statistician	1	30000	30000
Thesis write up	Printing drafts	1000	5	5000
	Printing thesis	10	1500	15000
Contingency fund				10000
Total				186000

Appendix VI: Ethics Approval



UNIVERSITY OF NAIROBI
COLLEGE OF HEALTH SCIENCES
P O BOX 19676 Code 00202
Telegrams: varsity
Tel: (254-020) 2726300 Ext 44355

KNH-UoN ERC

Email: uonknh_erc@uonbi.ac.ke
Website: <http://www.erc.uonbi.ac.ke>
Facebook: <https://www.facebook.com/uonknh.erc>
Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERC



KENYATTA NATIONAL HOSPITAL
P O BOX 20723 Code 00202
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

Ref: KNH-ERC/A/291

19th August, 2021

Dr. Priscilla Kashero
Reg. No. H58/11724/2018
Dept. of Paediatrics and Child Health
School of Medicine
College of Health Sciences
University of Nairobi



Dear Dr. Kashero

RESEARCH PROPOSAL: FIRST-TIME MOTHER'S KNOWLEDGE, ATTITUDE AND PRACTICE ON BREASTFEEDING AND COMPLEMENTARY FEEDING PRACTICES IN POST-NATAL WARD AT KENYATTA NATIONAL HOSPITAL (P179/03/2021)

This is to inform you that the KNH- UoN Ethics & Research Committee (KNH-UoN ERC) has reviewed and **approved** your above research proposal. The approval period is 19th August 2021 – 18th August 2022.

This approval is subject to compliance with the following requirements:


- i. Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
- ii. All changes (amendments, deviations, violations etc.) are submitted for review and approval by KNH-UoN ERC before implementation.
- iii. Death and life threatening problems and serious adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH-UoN ERC within 72 hours of notification.
- iv. Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH- UoN ERC within 72 hours.
- v. Clearance for export of biological specimens must be obtained from KNH- UoN ERC for each batch of shipment.
- vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (Attach a comprehensive progress report to support the renewal).
- vii. Submission of an executive summary report within 90 days upon completion of the study.

Protect to discover

This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/ or plagiarism.

For more details consult the KNH- UoN ERC website <http://www.erc.uonbi.ac.ke>

Yours sincerely,



PROF. M. U. CHINDIA
SECRETARY, KNH- UoN ERC

c.c. The Principal, College of Health Sciences, UoN
The Senior Director, CS, KNH
The Chair, KNH- UoN ERC
The Assistant Director, Health Information, KNH
The Dean, School of Medicine, UoN
The Chair, Dept. of Paediatrics and Child Health, UoN
Supervisors: Prof. Fredrick N. Were, Dept. of Paediatrics and Child Health, UoN
Dr. Rashmi Kumar, Dept. of Paediatrics and Child Health, UoN

Protect to discover

Appendix VII: Certificate of Registration

KNH/R&P/FORM/01




KENYATTA NATIONAL HOSPITAL
P.O. Box 20723-00202 Nairobi

Tel.: 2726300/2726450/2726565
Research & Programs: Ext. 44705
Fax: 2725272
Email: knhresearch@gmail.com

Study Registration Certificate

1. Name of the Principal Investigator/Researcher
.....
DR Priscilla Kavata Koshero
2. Email address: Prashero1@gmail.com Tel No. 0712197079
3. Contact person (if different from PI).....
4. Email address: Tel No.
5. Study Title
.....
FIRST TIME MOTHERS KNOWLEDGE ATTITUDE AND
.....
PRACTICE ON BREASTFEEDING AND COMPLEMENTARY
.....
FEEDING
6. Department where the study will be conducted POST NATAL WARDS
(Please attach copy of Abstract)
7. Endorsed by KNH Head of Department where study will be conducted.

Name: DR. J. MUIVA Signature  Date 8/9/2021
8. KNH UoN Ethics Research Committee approved study number
(Please attach copy of ERC approval)
9. I Priscilla Kavata Koshero/..... commit to submit a report of my study
findings to the Department where the study will be conducted and to the Department of Medical
Research.

Signature..... Koshero/..... Date 8/09/21
10. Study Registration number (Dept/Number/Year) Research / 230 / 2021
(To be completed by Medical Research Department)
11. Research and Program Stamp _____

All studies conducted at Kenyatta National Hospital **must** be registered with the Department of Medical Research and investigators **must commit** to share results with the hospital.