FACTORS INFLUENCING EXCLUSIVE BREASTFEEDING AMONG WORKING MOTHERS AT KANGEMI INFORMAL SETTLEMENT, NAIROBI

BY

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DECLARATION

I declare that this research project is my original work and has not been submitted to any other university for the award of a degree or contain any previously published material by other people except where due citation and reference have been made.

Signature  _____ **Date** 22/06/2022____

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The project was submitted for examination with my approval as the university supervisor.

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DEDICATION

I dedicate this work to my family - my children Ethan and Oliver, who were born during the writing of the research proposal, and to my lovely late mum and dad. They believed in education and encouraged me to strive to be the best.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Exclusive breastfeeding (EBF) of an infant for the first months of life has been scientifically proven to reduce the likelihood of childhood illnesses such as pneumonia and diarrhoea. Additionally, EBF has other advantages for the mother and the environment. The study focused on working mothers who reside in informal settlements and the challenges they face while trying to practice exclusive breastfeeding or the opportunities they have in their environment. The study was steered by four objectives with an aim to determine the prevalence of exclusive breastfeeding among working mothers in the Kangemi informal settlement, establish work conditions that influence EBF practices among working mothers in informal settlements, and identify the challenges and opportunities the lactating mothers have related to EBF practice.

The study is hinged on the theories of symbolic interactionism and of reasoned action. It was a descriptive cross-sectional study. Respondents were identified through consecutive sampling method, while key informants were purposively selected. Data from the mother-infant pair was obtained through a structured questionnaire, while data from key informants was obtained through a key informant guide. Quantitative data was analysed through SPSS software, where the association between variables was analysed through Pearson chi-square and Fisher's exact test. Qualitative data were analysed by identifying similar responses and merging them to relatable themes. The study findings show that socio demographic of mothers and infants had a significant relationship with EBF. Majority of the mothers were knowledgeable about EBF and its benefits. A significant majority of the respondents reported that work conditions affected their efforts to breastfeed exclusively. With respect to challenges and opportunities, mothers reported a dilemma in choosing work or total care for their children. On the other hand, some mothers had opportunities such as carrying their babies to the work place hence having enough time to breastfeed. The study recommended more public training and awareness about exclusive breastfeeding in the visual, print, and social media; regular motivation of community health volunteers through training and remunerations to reach more mothers in the community, and recruitment of additional nutrition officers in the facility.

CHAPTER ONE
INTRODUCTION

1.0 Background of the Study

Exclusive breastfeeding (EBF) is the act of feeding an infant with breastmilk directly from the mother's breast, wet nurse, or expressed breastmilk being provided through a feeding bottle or cup and spoon for six months after birth except for medicines, vitamin and mineral syrups and oral rehydration therapy solutions (World Health Organization 2001, UNICEF 1990). Based on empirical and subjective evidence (i.e., social-psychological and cultural attributes) on the beneficial aspects of breastfeeding to the infant and the mother, the World Health Organization recommends breastmilk, with its nutritional, immunological, and cognitive benefits to the baby (WHO, 2001). Nutritional benefits include a balance of polyunsaturated fatty acids essential for nerve function, brain health, and blood clotting, lipids in the form of essential fatty acids, saturated fats and cholesterol, whey protein, and protein-rich minerals for easier absorption and utilization by the body. Immunological benefits, which are the most important, are human milk's ability to protect against infections and cognitive benefits associated with breast milk assessed by intelligence quotient (I.Q) (American Academy of Paediatrics, 2005; WHO, 2003).

In addition, EBF has other benefits to the mother, society, and the environment, including reducing the risk of diseases such as cancer of the ovaries and breasts. It also helps in spacing children as prolonged lactation delays menstruation (Stevens et al., 2008). Benefits to society include saving domestic and national financial resources, which would have been used in medical care because mothers and infants are generally healthier. Benefits to the environment emanate from the fact that breast milk is natural and hence requires no purchasing of feeding equipment, fuel for distribution, or water to make it consumable. Unlike breast milk substitutes, therefore, it is environment friendly and less expensive (APA, 2008).

Studies on reducing child mortality rates have found evidence that exclusive breastfeeding has the potential to save an estimated more than one million children annually in the world (Bai et al., 2011). EBF prevalence has remained low worldwide despite global and national institutional support and relatively high knowledge levels among mothers (Li et al., 2005). The WHO and

UNICEF breastfeeding policy brief in 2011 revealed that globally, only 38% of infants under six months were fed exclusively using breast milk, while 6% of infants were never breastfed. 86% continued to breastfeed from 6 to 11 months, and 68% proceeded from 12 to 23 months. In Kenya, 61% of children under six months were exclusively breastfed in 2014, increasing from 32% in 2008-09 and 13% in 2003. On average, children were exclusively breastfed for 4.3 months in that period. The report indicated that breastfeeding is universal in the first month but declines with age (KDHS, 2014)

1.1 Statement of the Problem

Studies show that exclusive breastfeeding (EBF) prevents close to 1 million deaths globally in children under five years. It boosts immunity, decreasing the risk of infectious disease and malnutrition (Victora CG. et al., 2016). A study in Nairobi County revealed that malnutrition amongst children under five years of age remains high, with stunting levels at 26% and underweight levels at 11% (Nairobi CIDP 2018-2019).

As of the last health survey, Kenya's exclusive breastfeeding prevalence was 61% (KNBS, 2014). However, despite this promising national rate over that period, study findings in two urban slum areas of Nairobi County revealed a 2% prevalence (Kimani-Murage et al., 2011, 2014). The study found several factors to hinder optimal infant breastfeeding practices amongst the respondents. Child's sex is a significant factor, where boys had a high likelihood to be breastfed longer than girls owing to the perceived notion that male children consume more and need to be stronger. The perceived size of a child at birth is also crucial, where if the child was born underweight, the probability of being exclusively breastfed was higher than if they were born within the standard weight. The mother's marital status was also found to be influential. Children born to single parents had a higher possibility of being weaned earlier since the mother needed to return to work almost immediately to fend for the family, unlike married mothers. The latter could temporarily depend on the father's income for sustenance before resuming work. Some ethnic communities still hold beliefs and practices that do not conform with EBF, such as feeding an infant with herbal concoctions for protection. Mothers' education level, among other factors, also prevails (Kimani-Murage et al., 2014). In the study area, Kangemi, a study carried out in 2014, reported a 45.5% exclusive breastfeeding prevalence (Ayisi, Thuita, Njeru, &

Wakoli, 2014). The literature reviewed reveals that most of the current research findings in Kenya about exclusive breastfeeding focus on broad factors such as knowledge and social-cultural issues that hinder the practice of EBF. Very few studies have focused solely on working mothers residing in informal settlements and the challenges they face while trying to practice exclusive breastfeeding. Working mothers in informal settlements make up a substantial percentage of nursing mothers in the population, but little is known about the challenges or opportunities they have in their environment. Therefore, this study aims to assess exclusive breastfeeding practices among working mothers at Kangemi Informal Settlement, Nairobi.

1.2 Research Questions

1. How do maternal and infant socio-demographic characteristics influence exclusive breastfeeding among working mothers in the Kangemi informal settlement?
2. What is the level of knowledge and practice of EBF among working in the informal settlement?
3. What conditions in the workplace impacts a mother's decision to practice exclusive breastfeeding?
4. What challenges and opportunities do mothers working in the informal settlement have associated with exclusive breastfeeding?

1.3 Study Objectives

1.3.1 General Objective

The study's overall objective was to assess the factors influencing exclusive breastfeeding practice among working mothers in the Kangemi informal settlement.

1.3.2 Specific Objectives

1.3.2.1 Specific Objectives:

1. To assess how maternal and infant socio-demographic characteristics impact exclusive breastfeeding among working mothers in the Kangemi informal settlement.
2. To establish the level of knowledge and practice of EBF among working mothers in the Kangemi informal settlement.

3. To establish work conditions that influence EBF practices among working mothers in informal settlements.
4. To identify the challenges and opportunities that lactating mothers have in relation to practicing EBF.

1.4 Justification of the Study

Exclusive breastfeeding relates to human welfare, which is the primary goal of most research. The concept relates to health and economic well-being, as breastmilk's immunological properties help infants fight off childhood illnesses such as gastrointestinal problems, diarrhea, and pneumonia. It also reduces the risk of diabetes, overweight, and obesity in adulthood; hence it is a preventive approach to health that is cheaper than a curative approach.

Working mothers in informal settlements experience unique challenges influencing their decision to practice exclusive breastfeeding. Studies have found challenges such as work environment, time and space, types of activities, and income level as some of the unique challenges these women face. Therefore, the study can inform policymakers on programs that enhance the workplace environment for these mothers to practice EBF. Further, it will support the WHO Global targets 2025 policy, with one of its goals being to increase EBF rates to at least 50% globally from the current 38%. The study is also relevant to the second and third Sustainable Development Goals (SDGs), whose aim is to realize that every human beings have access to adequate and safe food for consumption. Finally, the study findings will add to the existing information about EBF in the informal settlements and thus serve as a reference for basic information for similar research in the future.

1.5 Scope and Limitations of the Study

The study assessed the prevalence and determinants of exclusive breastfeeding among working mothers in Kangemi informal settlement. Kangemi informal settlement is located along the Nairobi-Naivasha highway in Nairobi city's outskirts. It is an informal settlement area in Westlands constituency, Nairobi County. It is bordered to the north by the affluent hinterlands of Kibarage and Loresho, Westlands to the east, Kawangware slums to the south, and Mountain View to the west. It houses several different ethnic groups with the dominant group being from

Luhya ethnicity. The community is resource-deprived, where incomes are often inadequate to sustain a well-balanced diet with milk expressing nutrients for the mother. The pressure to sustain everyday life in the area is intense for some mothers (e.g., street vendors, domestic laborers). The burden of disease might be higher for some mothers and children (e.g., HIV and other communicable diseases like diarrhea). The specific objectives were assessing the prevalence of exclusive breastfeeding, establishing work conditions that influence EBF practice among the mothers, and identifying the challenges and opportunities the lactating mothers have related to EBF practice. The independent variables were maternal factors (i.e., maternal occupation, time constraints, perceived breast milk insufficiency, and maternal knowledge and awareness about EBF); socio-cultural factors (i.e., cultural beliefs); family and spouse factors, i.e., moral and financial support; infant factors such as age and gender. The dependent variable was EBF practice. The intervening variables were policies related to EBF, such as Baby-Friendly Hospital Initiative (BFHI), Baby Friendly Community Initiative (BFCI), Kenya National Nutrition Action Plan, and the Mother-to-Mother Support groups. The study focused on working mothers with infants aged between 0 and 6 months in Kangemi Informal Settlement. All working and lactating mothers with healthy children aged 0 to 6 months attending mother and child wellness clinics in the Kangemi Health Centre were considered. A sample frame of 75 mother-infant pairs was identified from the clinics through consecutive sampling.

Symbolic interactionism and the theory of reasoned action theories were used to explain the phenomena. The symbolic interactionism explained the scenario where some mothers, despite being informed about the benefits of breast milk and exclusive breastfeeding, do not practice it because of the symbolic meaning they have about mixed feeding. Other EBF misconceptions which subjugate facts were also present. The theory of reasoned action explains behavioral intention, which results from the belief that upholding a particular behavior will lead to the desired outcome. Data from mothers were collected using an interviewer-administered questionnaire. Data from key informants was obtained through a critical informant guide. Quantitative data were analyzed through SPSS software as descriptive statistics, including frequencies, percentages, measures of a central location, and measures of dispersion. Qualitative data were analyzed by compiling key themes emerging from the responses. Association between variables was analyzed through a chi-square test.

One of the limitations was that the researcher had to give breastfeeding talks and demonstrations as most mothers requested additional information after the interview, which took time. Financial constraints were another limitation as the research was self-funded.

1.6 Definition of Key Concepts

Exclusive breastfeeding (EBF) is the act of feeding an infant with breast milk directly from the mother's breast, wet nurse, or expressed breast milk-fed through a feeding bottle or cup and spoon for six months after birth, excluding medication, vitamins, mineral syrups, and oral rehydration therapy solutions.

Lactating mothers: women feeding their babies with milk from their breasts.

Perceived breast milk insufficiency: this is the belief that a nursing mother has, that they are not making enough breast milk to adequately feed their infant.

Antenatal clinic: maternity care offered in health facilities during pregnancy.

Parity: refers to the number of births where pregnancies reached viable gestational age.

Knowledge: a set of facts or information.

Practice can be understood as the implementation of knowledge, ideas, methods or beliefs. It requires prior learning of theories related to it.

Socio-demographic characteristics refer to the characteristics of a population. In the study the characteristics included age of mother, parity, marital status, occupation, religion, education level, and antenatal clinic attendance, place of delivery, infant's age and sex.

Informal settlements: these are neighborhoods that are characterized by poor living conditions such as poor housing, lack of proper sanitation, high unemployment levels, low income, health issues and crime. They are also commonly referred to slums.

Opportunities: a set of circumstances that makes it possible to do something, case in point, in this study the opportunity for mothers to breastfeed their infants exclusively for 6 months.

Work conditions: refers to issues such as physical and mental demands that exist in the workplace, hours of work, rest periods and remuneration.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

The informal sector comprises a high percentage of women than men globally. According to the United Nations, the South Asian informal sector is dominated by women (95%). In Sub-Saharan Africa, Latin America, and the Caribbean, women make up 89% and 59% of those working in the informal economy, respectively (U.N. Women, 2016). As described by the international labor organization, the nature of the informal economy is that of little or no growth in career, low income, little or no job security, and poor working conditions (ILO, 2017). While working in the informal economy can take various forms, women often occupy the most vulnerable, most hazardous, and lowest-paid positions. With a total lack of job security, employees such as home-based workers and day laborers usually have a weak bargaining edge due to low literacy levels. The urgency to make money to take care of their multiple financial responsibilities also contributes to this disadvantage.

Working mothers in informal settlements are often forced to resume work immediately after delivery because of their dire economic situations. Those who engage in not baby-friendly occupations, such as domestic workers, bar attendants, and commercial sex workers, are forced to delegate childcare to relatives, siblings, or baby daycare centers. The child is started on solid foods before the digestive system fully matures, which creates room for infections. Furthermore, the conditions in the daycare centers are often not hygienic, exposing the child to infections (Alfers, 2016). The option of expressing breast milk to leave behind for the child to be fed is also not viable for most mothers because of the fear of contamination and cultural beliefs (Antara R.C. & Aditi S. 2018). Another reason the mothers opt not to express breast milk is the concern that breasts will sag, especially among commercial sex workers, as this would interfere with their work.

Several studies have revealed that mothers of meager socioeconomic status, limited resources and deficiency of good foodstuff, inadequate housing conditions, and safe drinking water are less

likely to practice exclusive breastfeeding successfully. A study among nursing mothers in urban slum settlements of South India revealed that exclusive breastfeeding rates were considerably low because of maternal occupation (Naaarayan et al., 2018). Another study in India revealed that women working in the informal economy have unique impediments to optimal exclusive breastfeeding. The challenges cited included poverty, malnutrition, and long working hours that do not favor mothers rooming in with their infants. Lack of proper sanitation facilities such as drinking and cleaning water and absence of spousal and extended family support were also prevalent. Cases of sexual harassment, for example, where women are looked down upon for exposing their breasts while they breastfeed in public, inadequate healthcare attention and maternity protection, and poor health-seeking behavior were also rampant (Menon L; V Patel 2005). In the United States, a study among women from ethnic minorities found evidence that those working in jobs with meagre pay and having inadequate societal support has a low possibility of breastfeeding (Textor; Tiedje and Yawn,2013; Bai et al., 2009).

2.2 Exclusive breastfeeding and its benefits

Exclusive breastfeeding is advantageous to the infant, mother, and society. It is the practice of feeding an infant with breast milk directly from the mother's breast, wet nurse, or expressed breast milk-fed through a feeding bottle or cup and spoon for the first six months after birth except for medicines, vitamin and mineral syrups, and oral rehydration therapy solutions (World Health Organization 2001). The concept was adopted in 1990 at a meeting in Italy Innocenti Centre by policymakers from 30 countries. It was coined as The Innocenti Declaration Agenda, which set targets for breastfeeding protection, promotion, and support. The agenda's operational target number two was adopted to make sure that facilities providing maternity services adopt “the ten steps to exclusive breastfeeding." Several other review studies that support the WHO recommendations have been carried out since then, with the latest being "Optimal duration of exclusive breastfeeding" (Kramer et al., 2009), comprising of two controlled trials and 18 other studies conducted in both developed and developing countries, which agreed that exclusive breastfeeding of infants for six months has several advantages over exclusive breastfeeding for three to four months.

2.2.1 Benefits to the baby

Human milk provides enzymes that help make it easier for premature infants' bodies to absorb and make use of nutrients; immune factors help fight infections, hormonal, and growth issues. Research has proved that breast milk-fed infants have a reduced incidence of digestion system conditions, sepsis, and other infections. In addition, they tend to have higher I.Q scores than their counterparts (World Health Organization, 2017) and improved visual development. Furthermore, breastfeeding is a cost-effective intervention for addressing childhood obesity (Dietz, 2001, Dewey, 2003). In neonates and infants with low weight, breast milk protects against necrotizing enter colitis (Binns; Low, 2016). Several studies have documented evidence of the benefits of EBF to the baby. A study carried out in Bangladesh found that EBF in the first six months could have prevented about 27.37% and 8.94% cases of diarrhea and acute respiratory infection cases respectively (Khan et al., 2017). In another study carried out in Dhaka slums, EBF was compared with half-done or complete abstinence of breastfeeding. It was noted that the former was associated with a 2.23 times higher possibility of infant deaths and a 3.94 times higher possibility of deaths caused by acute respiratory infection and diarrhea, correspondingly (Arifeen et al., 2001). In the study area, previous studies have found out that half of the children are prone to upper respiratory infections, diarrhea, and fever.

2.2.2 Benefits to the mother

Research has identified several exclusive breastfeeding benefits to the mother, including the delayed return to fertility, better post-partum recovery, reduced bleeding after delivery, and reduced possibility of breast and ovarian cancers. Further, breastfeeding helps create a strong bond between mother and child, which helps reduce cases of abandoned babies (Labbok, 2001). Several studies have shown evidence of the benefits of EBF to the mother. Studies carried out by CDC's Division of Nutrition, Physical Activity, and Obesity (DNPAO) under their various programs document the benefits of exclusive breastfeeding to the mother as having a lesser risk of ovarian and breast cancer, Type 2 diabetes, and high blood pressure.

2.2.3 Benefits to the society/environment

Breastfeeding is a proven valuable tool in lessening the impact of climate change by saving energy, decreasing packaging waste of cans and bottles, and reducing the release of methane.

This greenhouse gas emission is one of the major factors of global warming. It also prevents habitat loss by decreasing global demand for dairy and saves water that would have been used by cows and in reconstituting powder and liquid formulas (The Lactation Network, 2021). In addition, EBF helps build strong immunity and therefore helps in lowering healthcare expenses (WHO, 2017). Furthermore, The World Breast Feeding week theme of 2020 was "Support Breastfeeding for a Healthier Planet," which supported the concept of exclusive breastfeeding.

2.4 Factors associated with exclusive breastfeeding

2.4.1 Maternal factors

2.4.1.1 Maternal occupation

A review article on barriers to EBF in low- and middle-income countries revealed a negative relationship between maternal occupation and EBF practices (Kavle et al., 2017). Women working in the informal sector often face structural barriers such as lack of maternity leave because the sector is not subject to government legislation which may hinder EBF (U.N. women 2016). Another article by the International Labour Organization further strengthens these findings that women comprise a large proportion of the poor working population in most developing countries. Further, lack of safeguard strategies to shield new mothers in the informal setup reduces their capability to practice exclusive breastfeeding. These mothers are already facing high economic risks. Due to the instability of their employment, they often feel obliged to continue or resume economic activities earlier, leaving no time to practice EBF (ILO, 2003).

A systematic review of barriers to EBF by USAID in 25 priority countries, in a campaign to end preventable child and maternal deaths findings show that maternal employment, especially that which involves manual labor or those without workplace safeguards, such as breaks for breastfeeding, was a barrier to EBF (Justine A. et al., 2017). In this study maternal occupation was found to have both positive and negative influence. Those in informal and formal employment had a higher likelihood of practicing mixed feeding than those in business due to flexibility of work.

2.4.1.2 Time constraints

A study carried out in India and South Africa among mothers working in the informal sector found they were knowledgeable about EBF and its benefits. However, they could not sustain it due to family economic needs requiring them to return to work almost immediately. This double burden put most women at a crossroads in deciding whether to return to work or stay home and take care of the child. The non-conducive work environment where a baby cannot be taken to the workplace due to safety and hygiene and the lack of support from colleagues also discourage the mothers from bringing their babies to work, limiting mother-child interaction time. Findings also revealed that the nature of informal work of having no formal maternity protection such as maternity leave or kitty to cushion them during the period further impeded their ability to continue exclusive breastfeeding. In contrast, the study found that informal work offered some mothers the independence and flexibility to practice exclusive breastfeeding in some cases. (Antara R.C. & Aditi S. 2018).

In another study carried out in India among 120 mothers working in three informal occupations, i.e., domestic workers, street vendors, and waste pickers, almost half (47%) of the mothers resumed working within three months after delivery, while 21 % returned three months following. The proportion of those who could sustain breastfeeding during working hours was 27%, with the rest opting to complement with other feeds. (Chowdhury A, Surie A, 2018).

In a study in Thailand among mothers working in the informal economy, they reported that long working hours decreased their milk supply. They had no choice but to introduce other foods as the children were not getting enough (Yimyam & Morrow, 1999). A study carried out in two Kenyan slums reported that mothers returned to work shortly after giving back, citing that their economic situation could not allow them to stay home and care for the baby. During a focus group discussion, a mother was quoted saying, "the baby will not eat the name "good care." In addition, the rest of the family depended on the mother's income; hence she had to work. The mothers also reported working for long hours and in environments that could not allow them to bring their children with them. In light of this, they opted to leave them behind under the care of caregivers such as relatives, siblings, neighbors, and in some circumstances, day and night care centers. (Kimani-Murage et al. 2014).

2.4.1.3 Breast milk insufficiency

A study carried out in the Gambia found that low income impeded EBF due to the mothers' inadequate access to and consumption of food, which meant that they could not produce enough breast milk to nourish their infants. Another study carried out in rural Zimbabwe found that low social-economic status impeded exclusive breastfeeding in two ways. Some mothers fed on poor diets and did not have enough milk, while others opted to return to work, which did not leave enough time for exclusive breastfeeding (Njai and Dixey 2013).

In Urban Kenya, a study on food security in two slum areas in Nairobi reported that in the 30,000 households that were surveyed, 85% were food insecure, with 50% having severe food insecurity. Both factors hindered exclusive breastfeeding, as mothers cited that they did not produce enough breast milk due to inadequate food intake. (Kimani-Murage et al. 2014). The study also found that most urban poor mothers rely on manual labor, working as daytime domestic workers, which does not leave them with much energy to produce enough breast milk.

2.4.1.4 Work place environment

Studies conducted in low- and middle-income informal economies reveal that the informal economy workplace environment offers little or no EBF support. For example, street vendors and domestic workers find it hard to continue breastfeeding as their work environment does not allow them to take their babies along. A study carried out by Women in Informal Employment: Globalizing and Organizing (WIEGO) in 2016, across five countries, Brazil, Ghana, India, South Africa, and Thailand, found that street vendors faced the challenge of loss of customers, especially food vendors where customers deemed breastfeeding and changing of diapers in the same environment as unsanitary and would not buy from them, on the other hand, the vendors were always busy attending to customers, and they hardly have time to breastfeed a baby.

Another challenge faced by street vendors was the exposure to natural elements such as rain and hot sun, which meant they could not bring their babies to work. Domestic workers cited that they could carry their babies to work, but childcare demanded more attention and could interfere with their work and income; hence they opted to leave the child behind. In addition, domestic workers also had to seek permission from their employers, which is not always granted.

Vendors on the streets cited that they were always busy attending to customers and hardly had time to breastfeed a baby. In addition, open-air vending is not safe for an infant (Moussié, 2018, Alfers, 2016).

In another study carried out in India, mothers who worked as street vendors pointed out that they could not carry their children to work due to extreme weather conditions, exposure to dirt and chemicals, and the general security of their infants. They opted to leave them behind. The respondents reported instances where children had been injured, kidnapped, and killed during vending hours (Horwood, C et al., 2017). In this study some mothers who worked in salons and as food vendors reported similar challenges at their workplace including exposure to cold, dust, noise, and disruptions (9.3%) and smoke and hair treatment chemicals (4%).

2.4.2 Socio-cultural factors

2.4.2.1 Cultural beliefs

Several studies have found cultural beliefs to negatively and positively influence exclusive breastfeeding. A study in two Nairobi slums found negative and positive cultural factors influencing exclusive breastfeeding. Some negative beliefs were that colostrum is dirty and hence bad for the baby, breastfeeding in public is considered inappropriate, and the perception that breast milk only is not sufficient nutrition for a child. Positive factors included the Muslims' belief that colostrum makes the child brighter and that breastfeeding is a religious recommendation (Wanjohi et al., 2016).

A study in Ghana found that cultural practices such as giving water and concoctions to infants during traditional naming ceremonies to quench a perceived thirst are popular practices that do not align with exclusive breastfeeding WHO recommendations (Tampah-Naah; Kumi-Kyereme, 2013).

2.4.3 Family and spouse factors

Several studies have found spousal and family support to impact the decision of a mother to breastfeed exclusively. In a study carried out in India among working mothers, it was found that

the likelihood of mothers who had supportive families towards breastfeeding was 2.85 times higher than their counterparts who had less support (Ratnasari et al., 2017).

A study carried out in Indonesia found that family support and the father's level of education are closely linked to the EBF practice among working mothers. Mothers who received moral and financial support from extended family and spouses had a higher likelihood of breastfeeding exclusively than those not receiving such support (Yunri Merida et al., 2020). Other studies found that grandparent's support encouraged breastfeeding. Case in point, a survey carried out in the USA, mothers who had support from extended family members especially grandmothers were more motivated to breastfeed (Arora S et al., 2000). Another review study found that grandmothers influenced the practice of EBF since they provide immediate support to young mothers in the family. If they believed in EBF, it was more likely to be upheld (Negin et al., 2016).

2.5 Strategies to increase exclusive breastfeeding practice

Various approaches have been studied and tested in developed and developing countries to promote optimal exclusive breastfeeding. They include prenatal education, breastfeeding initiation within one hour of life, kangaroo mother care, no prelacteal feeds, mother and child rooming-in, and exclusively breastfeeding for the first six months. The two initiatives adopted by the Kenyan government for supporting and promoting exclusive breastfeeding are the Baby-Friendly Hospital Initiative (BFHI) and the Baby-Friendly Community Initiative (BFCI) of 2009. They aimed to promote breastfeeding in hospitals by emphasizing practicing the "Ten Steps to Successful Breastfeeding" and spreading knowledge about EBF and its benefits to mothers and the general community (WHO/UNICEF, 2009). The other policy document promoting EBF is the Kenya National Nutrition Action Plan of 2012 – 2017 and 2018 - 2022, which spelled out enhancing exclusive breastfeeding as one of the lead activities toward improving the nutrition status of children under five years. Several county governments have also developed nutrition action plans to support the national plan. Some of the activities in the plan include counseling on infant and young child feeding (IYCF) in the role of Community Health Volunteers (CHVs) as one of the Community Health Strategies. Mother-to-Mother Support groups meant to bring mothers together to educate them about infant and young child nutrition feeding issues were also

used (NNAP 2012-2017; 2018-2022). However despite these initiatives, EBF rates still remain low in informal settlements.

2.6 Theoretical framework

2.6.1 Theory of reasoned action

The theory of reasoned action speculates that an individual's intent to carry out a particular behavior is the primary indicator of whether they will implement it. The intention must be present for a person to perform the behavior. Fishbein and Ajzen refer to it as behavioral intention. Behavioral intention is motivated by the belief that performing a particular behavior will lead to the desired outcome. For example, in this study, exclusively breastfeeding a child for the first six months will benefit the child, mother, and the community in the short and long term. The theory further proposes that the stronger the intentions, the higher the likelihood of the behavior being performed. (Martin Fishbein and Icek Ajzen, 1967)

This theory is thus essential in understanding mothers' decision to exclusively breastfeed their infants for the first six months, given that they are knowledgeable about exclusive breastfeeding and its benefits. The theory also acknowledges that various factors can influence an individual's intentions to perform a behavior. Some reviewed studies have found that a mother's knowledge about exclusive breastfeeding and the intention to do it does not always translate to practice. Other factors such as type of occupation, financial constraints, time, and social-cultural issues affect their decision of whether to breastfeed exclusively or not.

2.6.2 Symbolic interactionism

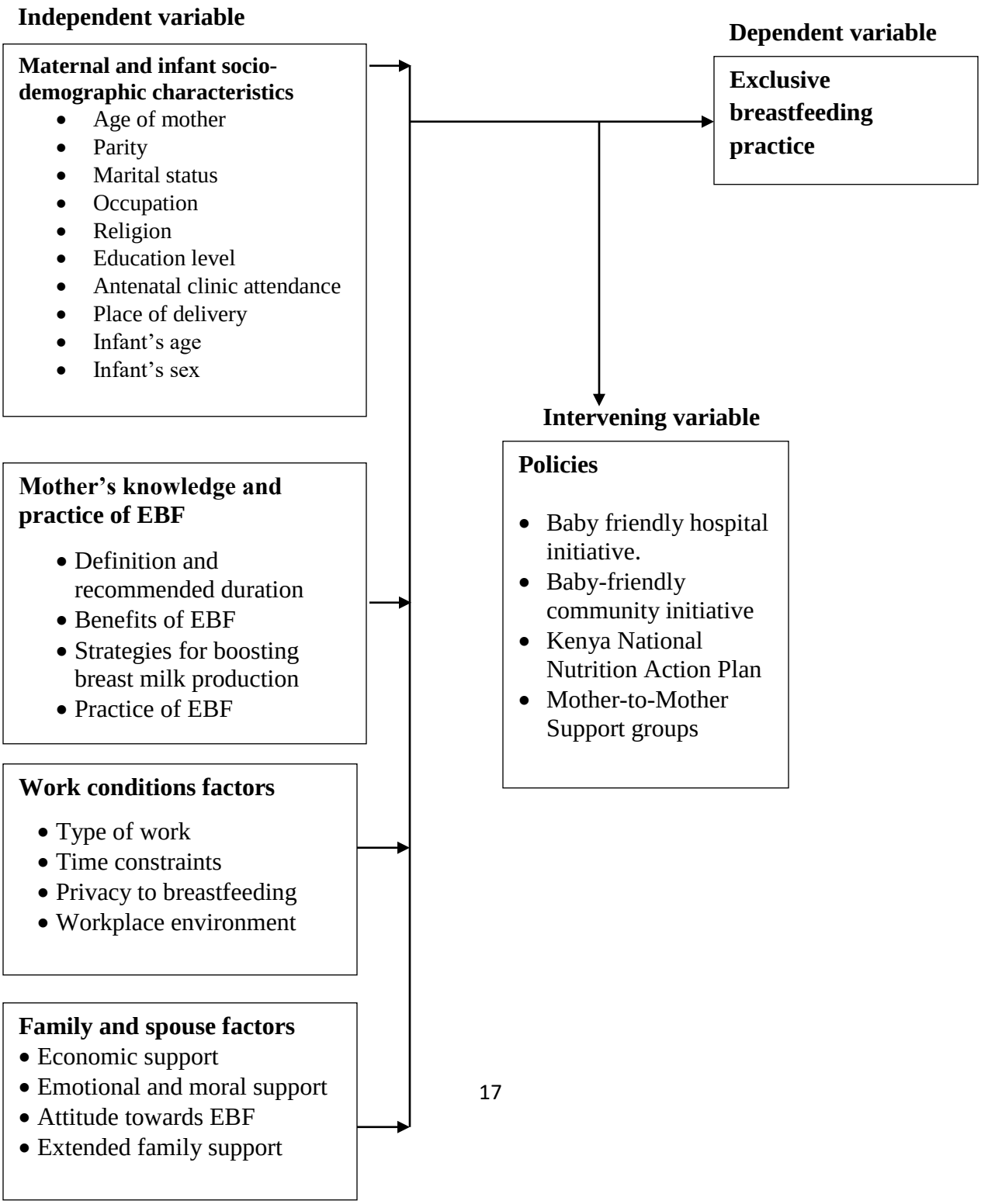
The theory posits that human beings give meaning to symbols, expressing these things through language. The theory examines society by addressing the subjective meanings that people inflict on objects, events, and behaviors. Idiosyncratic significances are given superiority because people are believed to behave grounded on what they believe and not just on what is demonstrably true (Mead, 1934: Blumer, 1969). It is relevant to this study as it can explain why some mothers do not practice EBF, despite knowing its benefits to the baby and themselves. For example, mothers from specific communities and neighborhoods do not exclusively breastfeed their children even when scientific evidence outlines the benefits of doing so. Symbolic

Interactionism Theory explains that despite some mothers being informed about the benefits of breast milk and exclusive breastfeeding, they believe mixed feeding is okay as their mothers and grandmothers have always done it. They could also have misconceptions that colostrum is dirty and that their breasts will sag due to prolonged breastfeeding. So, the symbolic meaning of mixed feeding and misconceptions subjugates the facts about EBF benefits.

2.7 Conceptual framework

The conceptual framework illustrates factors associated with EBF among working mothers in informal settlements and how they are related. Maternal factors, i.e., occupation, time constraints, perceived breast milk insufficiency, and knowledge and awareness about EBF and its benefits, have affected women's decision to practice EBF in various ways. Firstly, maternal occupation may necessitate parting of mother and child in situations where the mother cannot carry the baby to their workplace, making EBF unsustainable. Secondly, time constraints hinder optimal EBF as mothers spend long hours away from the baby due to work commitments and perceived breast milk insufficiency. Mothers in the informal economy tend to earn less income, meaning there is not enough food for the mother, hence less milk production. Social-cultural factors, including beliefs and cultural practices, are related to exclusive breastfeeding. Firstly, beliefs such as colostrum being dirty and that the mothers' breasts will sag due to breastfeeding and cultural breastfeeding practices such as mixed feeding, which is considered okay, have hindered the success of EBF. Infant factors, i.e., age and gender, are associated with EBF, whereby studies have shown that the age of infants can determine whether they are exclusively breastfed or not. This study found that newer infants are more likely to be exclusively breastfed than elder infants. Other studies have found the gender of a child to influence EBF, where boys had a higher likelihood to be weaned earlier than girls because of the perceived notion that male children consume more and need to be stronger. Family and spouse factors, including financial, emotional, and moral support from spouse and extended family, have been associated with EBF. Mothers who receive spousal support are more likely to achieve optimal EBF than those who do not. Extended family members such as grandmothers have influenced a mother's decision on the practice.

Figure 1: Conceptual framework



CHAPTER THREE
METHODOLOGY

3.1 Introduction

This chapter emphases on the methodology used for the study. It provides information on the study design, population, and sample size, sampling technique, the instruments for data collection and analysis procedures, and ethical considerations.

3.2 Study area

3.2.1 Study site description

The study was carried out in Kangemi Health Centre, a government-owned and run facility. Health services offered at the center include antenatal and post-natal care, growth monitoring and promotion, HIV counseling and testing and antiretroviral therapy, maternity services with a 20-bed capacity, curative outpatient services, family planning, and immunization, tuberculosis diagnosis, and treatments, among others.

3.2.2 Demographic characteristics of the area

Kangemi is one of East and Central Africa's largest Informal Settlements (Slums). Administratively, it is in Westlands constituency, Nairobi County. Kangemi houses several ethnicities with the dominant one consisting of the Luhya tribe (Nairobi CIDP 2018-2022). It has an estimated 100,000 population density of 27852 and ground coverage of 1.6 sq. km (Westlands constituency, 2014). The majority of the family types in Kangemi consist of single parents and married partners, as the results revealed that majority (80%) were married while (20%) were single parents.

3.2.3 Poverty levels

It is estimated that the overall poverty levels in Nairobi County population stand at (16.7%) while (11.3%) of Households are poor, with the most affected population categories being informal settlement dwellers such as the study area residents. The leading causes of poverty are lack of employment opportunities for the residents and increased prices of essential commodities

against limited incomes. (Nairobi CIDP 2018-2022). Most residents in the study area who work are casual workers in affluent neighborhoods and small traders selling commodities along the road (KIHBS, 2015-2016).

Gender inequalities are deeply entrenched in the informal settlements, where women are most affected. Women in the slum play a tri-fold role of providing, protecting, and caregiving not only of their children but also the whole family, while men have resorted to alcohol and drug abuse due to frustration.

An article by thejournal.ie about life in Kangemi informal settlements, revealed that levels of unemployment are high, substance and alcohol addiction level have skyrocketed, while a significant number of inhabitants being HIV positive (Hennessey, 2016). The article is resounded by a report done by Borgen Project 2017, which describes Kangemi as home to some of Nairobi's poorest, characterized by high unemployment rates, lack of running water and proper sanitation, drug addiction, and alcoholism.

3.2.4 Health and nutrition

A nutrition SMART survey carried out in Nairobi County by the health sector in May 2017 showed that the burden of malnutrition in the county is still high, with stunting levels for children less than five years standing at 26% and the proportion of children under five who are underweight at 11%. The most affected categories are children living in informal settlements such as the study area.

A report published by Oxfam International 2009, in one of their projects in Kenyan slums, revealed that children in Nairobi's slums are among the unhealthiest in the country. More than half of the children are prone to upper respiratory infections, diarrhea, and fever. Moreover, more than half were less likely to be immunized than their counterparts in the rest of the country.

3.3 Research design

A descriptive cross-sectional study was adopted to assess the factors influencing exclusive breastfeeding practice among working mothers in the Kangemi informal settlement. Descriptive

cross-sectional studies are used to describe characteristics that exist in a community (Creswell & Clark, 2017).

3.4 Unit of analysis

It is the central study object in the research project, that is, the "who or what" the study seeks to analyze. It could include individuals, groups, social interactions, organizations and or institutions. The unit of analysis was the working and lactating mother of an infant aged 0 - 6 months.

3.5 Unit of observation

It can be defined the object about which research data is collected on, and analysis is focused. It is the object about which information is sought. The observation unit in this study was the working mothers with infants aged 0 to 6 months residing in the Kangemi informal settlement.

3.6 Selection criteria

3.6.1 Inclusion criteria

This study considered all working and lactating mothers with healthy children aged 0 to 6 months attending post-natal and immunization clinics in the Kangemi Health Centre.

Mothers who agreed to participate by giving consent were included in the study.

3.6.2 Exclusion criteria

Mothers with ill infants less than six months were excluded.

Mothers who declined to participate in the study were excluded.

3.7 Target population

The target population of this study was working and lactating mothers with infants aged 0 to 6 months in the Kangemi informal settlement.

3.7.1 Study population

The study population was working and lactating mothers with infants aged between 0 to six months attending post-natal and immunization clinics at Kangemi Health Centre and living in Kangemi informal settlement. A total of 75 mother-infant respondents were identified through

consecutive sampling from the child wellness clinic. The study also engaged two key informants who were purposefully selected due to their association with the mother-infant pairs, the clinical nutritionist, and the community health volunteer attached to the health center and involved in maternal, infant, and young children's feeding programs.

3.8 Sampling techniques

Consecutive and purposive sampling methods were used to select the respondents. Mother-infant respondent were selected through consecutive sampling as they attended the clinic.Consecutive sampling technique works where the first respondent that meets the inclusion criteria is selected for the study and this continues for the subsequent respondents until the sample size is realized. Key informants were purposefully selected from the study site – Kangemi health center, including a resident nutritionist and a community health volunteer (CHV). The key informants cover a large area and population and are more informed to give a representative opinion on factors affecting breastfeeding among working mothers in the Kangemi informal settlement.

3.9 Sampling procedure and data collection

The study focused on nursing mother-infant pairs aged 0 to 6 months working in the informal economy in the Kangemi Informal Settlement attending the post-natal and immunization clinic at the Kangemi health center. Mother-infant pairs usually visit the clinic at six, ten, and fourteen weeks for immunization and monthly growth monitoring. The mother-infant pair to be interviewed were selected as follows.

a) The mother-infant pair who had visited the clinic on the data collection day was noted from the child wellness clinic register with the assistance of a nutritionist,
b) Following ethical considerations and explanation of what the study was about, those who satisfied the inclusion criteria were requested for consent to participate in the study.
c) Data collection took place each day until the required sample number was obtained.

Data from the mother-infant pair was obtained using an interviewer-administered questionnaire with six parts; mother and infant background information, knowledge, practice, support, work conditions, challenges, and opportunities questions. Knowledge about exclusive breastfeeding principles was assessed using a five-point Likert scale (SA-strongly agree, A-agree, N-neutral,

D-disagree, and SD-strongly disagree). Practices were measured against the three indicators, including early initiation of breastfeeding, no prelacteal feeds, and exclusive breastfeeding (EBF) from birth to six months. Support, work conditions, challenges, and opportunities questions were close-ended with explanations when necessary. Data from key informants was obtained through a key informant guide which focused on challenges that they have observed to influence EBF among mothers. It also focused on programmes that support mothers to exclusive breastfeed their infants for the first six months.

3.10 Data Analysis techniques

Quantitative data were analyzed through SPSS software as descriptive statistics. Association between variables was analyzed through chi-square. Qualitative data were analyzed by identifying key themes emerging from the responses and used to supplement the quantitative data.

3.11 Study limitation

Some of the study's limitations were recall bias, where some respondents could not accurately recollect what transpired during the first weeks or months after birth. The study dealt with this by asking different questions intended for the same outcome.

Mothers attending the clinic being more informed about exclusive breastfeeding could have given the desirable responses even if they did not practice them. They could also be more compliant than a random sample in the population.

3.12 Ethical considerations

Ethical approval was sought from the National Commission Committee for Science Technology and Innovation (NACOSTI), County Health Services - Nairobi Metropolitan Services, and a letter of approval from the Department of Sociology and Social Work - University of Nairobi was issued.

Consent from respondents was sought, and they were interviewed after an explanation of the study and understanding that participation is voluntary. The respondents were assured of the

privacy of the study and that the study outcomes were to be utilized for educational purposes only, and that no names would be written on the questionnaire to ensure confidentiality.

CHAPTER FOUR
DATA ANALYSIS, PRESENTATION, AND INTERPRETATION

4.1 Introduction

This section contains the following thematic areas: Socio-demographic characteristics of working mothers at Kangemi informal settlement, infant background information, knowledge, practice, support, work conditions, challenges, and opportunities of exclusive breastfeeding among the mothers. A total of 75 mother-infant pairs were recruited using consecutive sampling and two critical key informants in Kangemi Health Center, Nairobi County, Kenya.

4.2 Objective 1: To assess how maternal and infant socio-demographic characteristics impact exclusive breastfeeding among working mothers in the Kangemi informal settlement.

This section contains the socio-demographic characteristics of the respondents and their effect on exclusive breastfeeding practice. The study sought demographic characteristics of the mother-infant pair, including age, parity, marital status, maternal occupation, education level, religion, ANC attendance and frequency, place of delivery, infant's age, and sex. The findings on this objective are highlighted below.

4.2.1 Age of the respondents

A total of 75 mother-infant pairs were recruited for the study. The median age of the mothers was 27 years. A significant number (45.3%) of the respondents were in the 25-29 years age gap. Those in the age groups of 20-25 and 30-34 years followed closely, with 21.3% and 22.7%, respectively. While the age bracket 35-39 years accounted for 5.3%, and the 15-19 and 40-44-years age brackets accounted for 2.7% each. The age distribution shows that most of the respondents were youth. (See table 4.1).

Table 4.1 Age of respondents

Information on the mother	Frequency	Percent (%)
Mothers age (n=75)		
15 -19 years	2	2.7 %
20-24 years	16	21.3 %
25-29 years	34	45.3 %
30-34 years	17	22.7 %
35-39 years	4	5.3 %
40-44 years	2	2.7 %

4.2.2 Parity of the respondents

The study established the number of dependent children respondents had, to identify caregiver's responsibilities and how the situation affected exclusive breastfeeding efforts. In this respect majority of the respondents (85.3%) had 1 to 2 children, and the rest (14.6%) had between 3 and 4 children.

Table 4.2 Parity of the respondents

Parity (n=75)	Frequency	Percent
1-2 children	64	85.3 %
3-4 children	11	14.6 %

4.2.3 Marital status

The study examined the respondents' marital status for comprehending the mothers' responsibilities that come with that status. It also helped investigate if there was a link between their responsibilities and the likelihood of practicing exclusive breastfeeding. Results reveal that majority of the respondents (80%) were married, while (20%) were single parents.

Table 4.3 Marital Status

Marital status	Frequency	Percent (%)
Single	15	20 %
Married	60	80 %

4.2.4 Maternal occupation

Mothers who reported to be in formal employment were (5%) while (57%) were in informal employment, and the rest (37%) ran their small businesses ranging from running kiosks, vending vegetables and fruits, and cooked sausages and eggs, selling second-hand clothes and shoes on the roadsides. No respondents reported to be unendingly jobless, and hence all belonged to either of the three broad categories.

Table 4.4 Occupation

Occupation	Frequency	Percent (%)
Formal employment	4	5 %
Informal employment	43	57%
Business	28	37 %

4.2.5 Religion

All the respondents were Christians, with (72%) of protestant denominations and 28% belonging to the catholic denomination.

Table 4.5 Religion

Religion	Frequency	Percent (%)
Christian Protestant	54	72 %
Christian Catholic	21	28 %

4.2.6 Education level

The education level of the respondents was found to be comparable, with (76%) having low education, notably ranging from having primary education to having completed secondary school

and (24%) having completed college and tertiary education. One key informant mentioned that the low level of education among most mothers affected training and uptake of exclusive breastfeeding. Most had difficulty grasping information about the importance of exclusive breastfeeding.

Table 4.6 Education level

Level of education	Frequency	Percent (%)
primary but not completed	3	4 %
primary completed	18	24 %
secondary but not completed	6	8 %
secondary completed	30	40 %
college and above	18	24 %

4.2.7 ANC attendance frequency

The frequency of ANC attendance was studied to establish its correlation with exclusive breastfeeding knowledge and practice. All respondents claimed to have visited the antenatal clinic at least once. 66.7 % had visited 1 - 5 times (as outlined in the table below), which is significant to the study as high clinic attendance has positively impacted the practice of exclusive breastfeeding in other studies.

Table 4.7 ANC attendance frequency

Number of ANC visits	Frequency	Percent
1-5 times	50	66.7%
6- 9 times	25	33.3 %

4.2.8 Place of delivery

The study sought to determine where the respondents gave birth and its relation to exclusive breastfeeding. A majority (97.3%) of the mothers gave birth in the hospital, while only (2.7%) reported giving birth at home. The high number of mothers delivering in the hospital could explain the slightly higher rate of exclusive breastfeeding in this study, as the ‘Ten Steps to

Successful Breastfeeding' policy adopted in the maternity services has been quite successful. According to the health center's nutritionist and the nurse in charge, pregnant mothers attending antenatal clinics in the facility are put in groups called 'mother-to-mother support groups which continue after delivery and for up to one year.

Table 4.8 Place of delivery

Place of delivery	Frequency	Percent
Hospital	73	97.3%
Home	2	2.7 %

4.2.9 Infant's age

The study sought to establish the infant's specific age to determine if there was any association between age and exclusive breastfeeding.

According to one of the key informants, the fact that some mothers are on maternity leave and take a break in the first months after delivery explains why newer infants were more likely to be exclusively breastfed than elder infants. Once they start working again, they cannot sustain exclusive breastfeeding for various reasons such as time constraints, perceived breast milk insufficiency, and unfavorable environment and work conditions. As mentioned earlier, this situation was further echoed by one of the key informants, that most mothers go back to work at three months of lactation, which is when they start doing mixed feeding. Most do not attend clinics at 4 and 5 months for growth monitoring until six months in time for vitamin A supplementation.

Table 4.9 Infant's age

Age	Frequency	Percent (%)
1.5 months	5	6.7%
2.5 months	26	34.7 %
3.5 months	25	33.3 %
4 months	10	13.3 %
5 months	5	6.7 %

6 months	4	5.3 %

4.2.10 Infant's sex

The study tried to find out the sex of the infant as it would help reveal if there was any association between the sex of an infant and the duration of exclusive breastfeeding.

Table 4.10 Infant's sex

Infant's sex	(N=75)	
	Frequency	Percent (%)
Male	33	44 %
Female	42	56 %

4.3 Bivariate analysis: socio-demographic characteristics association with exclusive breastfeeding.

In this study, both the Pearson chi-square and Fishers' Exact Test were used where appropriate to determine whether there was a relationship between social-demographic characteristics and exclusive breastfeeding. Fishers' Exact Test was used where the sample was small and cells had expected counts of less than 5. The mothers were asked a 24-hour recall question to establish whether they were doing exclusive breastfeeding or mixed feeding. A 24-hour recall is a method recommended by the WHO to assess one of the indicators of infant and young child feeding practices based on the past 24-hour diet, i.e., the prevalence of EBF among children of age less than six months (Ruel, M. T., & Arimond, M. 2003).

4.3.1 Mother's age association with EBF

The results show that mother's age with a p-value of 0.257 did not have a significant relationship with exclusive breastfeeding. However, it was noted that mothers in the 25-29 age group were more likely to do mixed feeding because they were the majority in the study.

Table 4.11: Mother's age association with EBF

Variable	**Category**	**Did the baby feed on any of the following liquids in the last 24 hours?**					
		Yes		**No**			
Age of mother		**N**	**%**	**N**	**%**	**Fisher's exact test**	**(P-value)**
	15 -19 years	1	50%	1	50%	6.062	0.257
	20-24 years	2	12.5%	14	87.5%		
	25-29 years	14	41.2%	20	58.8%		
	30-34 years	6	35.3%	11	64.7%		
	35-39 years	2	50%	2	50%		
	40-44 years	0	0.0%	2	100%		

4.3.2: Parity association with EBF

The number of children each mother had (p=0.8) was also found not to be associated with exclusive breastfeeding. However, in comparing those who reported not having given any other liquids in the last 24 hours, those with one child (72%) and three children (70%) had the highest percentage of practicing exclusive breastfeeding compared to those with two children (61.5%). In part, this can be explained by the fact that those with one child were younger mothers who were more concerned on the baby's welfare. They have no experience and are open to new information. Those with three children were older mothers with more experience and perhaps fewer responsibilities compared to middle-aged mothers with more responsibilities and little time to practice exclusive breastfeeding.

Table 4.12: Parity association with EBF

Variable	Category	Did the baby feed on any of the following liquids in the last 24 hours?					
		Yes		No			
		N	%	N	%	Fishers' exact test	P-value
Parity	1	7	28%	18	72%	1.313	0.8
	2	15	38.5%	24	61.5%		
	3	3	30%	7	70%		
	>4	0	0.0	1	100		

4.3.3 Mother's marital status association with exclusive breastfeeding

Results indicate no association between marital statuses and exclusive breastfeeding in Kangemi (p=0.221). In terms of percentages, those who were single were more likely to do mixed feeding (46.7%) than those who were married (30%).

Table 4.13: Marital status association with EBF

Variable	Category	Did the baby feed on any of the following liquids in the last 24 hours?					
		Yes		No			
		N	%	N	%	Pearson chi square	P-value
Marital status	Single	7	46.7%	8	53.3%	1.5	0.221
	Married	18	30%	42	70%		

4.3.4: Mother's occupation association with EBF

Results show that mother's occupation (p=0.842) had no significant statistical association with exclusive breastfeeding. However, in terms of percentage, those who were in informal and formal employment had a higher likelihood of practicing mixed feeding than those in business. This phenomenon could be credited to the fact that mothers in business had the opportunity to take their babies to work, hence higher chances of practicing exclusive breastfeeding.

Table 4.14: Mother's occupation association with EBF

Variable	Category	Did the baby feed on any of the following liquids in the last 24 hours?					
		Yes		No			
		N	%	N	%	Fisher's exact	P value
Occupation	Formal employment	1	25%	3	62.8%	0.709	0.842
	Informal employment	16	37.2%	27	62.8%		
	Business owner	8	28.9%	20	71.4%		

4.3.5 Level of education association with exclusive breastfeeding

There was no relationship between the level of education and exclusive breastfeeding (p-value =0.226). Analyzing for frequency and percentage, mothers who had attained college and above

education levels (15, 83.3%) had a higher likelihood to breastfeed their infants exclusively than their counterparts.

Table 4.15: Level of education association with EBF

Variable	Category	Did the baby feed on any of the following liquids in the last 24 hours?					
		Yes		No			
		N	%	N	%	Fisher's exact test	P value
	primary but not completed	0	0.00%	3	100%	5.468	0.226
	primary completed	6	33.3%	12	66.7%		
	secondary but not completed	3	50%	3	50%		
	secondary completed	13	43.3%	17	56.7%		
	College and above	3	16.7%	15	83.3%		

4.3.6: Antenatal clinic visits association with EBF

The number of antenatal clinic visits did not have a statistically significant relationship with exclusive breastfeeding. However, it is interesting that all three (3) who went to the nine antenatal clinics practiced exclusive breastfeeding.

Table 4.16: Number of antenatal clinic visits association with EBF

Variable	Category	Did the baby feed on any of the following liquids in the last 24 hours?					
		Yes		No		Fishers' exact test	P value
		N	%	N	%	5.044	0.542
Number of ANC visits	3	2	18.2%	9	81.8%		
	4	10	50%	10	50%		
	5	6	31.6%	13	68.4%		
	6	4	28.6%	10	71.4%		
	7	2	40%	3	60%		
	8	1	33.3%	2	66.7%		
	9	0	0.00%	3	100%		

4.3.7 Place of delivery association with EBF

The place of delivery was not found to have a statistically significant relationship with exclusive breastfeeding. Most mothers gave birth in the hospital, and of those (65.8%) practiced EBF. Interestingly, the only two respondents who gave birth at home practiced exclusive breastfeeding.

Table 4.17: Place of delivery association with EBF

Variable	Category	Did the baby feed on any of the following liquids in the last 24 hours?					
		Yes		No		Fisher's exact	P value
		N	%	N	%		
Place of delivery	Hospital	25	34.2%	48	65.8%	0	0.550
	Home	0	0.00%	2	100%		

4.3.8 Infant's age association with EBF

Infant's age with a p-value of =0.03 was found to have a statistically significant relationship with exclusive breastfeeding. Younger infants were more likely to be exclusively breastfed than older infants. This could be explained by the fact that some mothers are on maternity leave and take a break in the first months after delivery. Once they resume working, they cannot sustain exclusive breastfeeding for diverse reasons. Some cited reasons are time constraints, perceived breastmilk insufficiency, and unfavorable work and environmental conditions. One of the key informants further echoed this, as mentioned earlier, that most mothers go back to work at three months, which is when they start doing mixed feeding. Most do not attend clinics at 4 and 5 months for growth monitoring until six months in time for vitamin A supplementation.

Table 4.18: Infant's age association with EBF

Variable	Category	Did the baby feed on any of the following liquids in the last 24 hours?					
		Yes		No			
		N	%	N	%	Fisher's exact test	P-value
Infants age	1.5 months	0	0.00%	5	100%	16.483	0.03
	2.5 months	3	11.5%	23	88.5%		
	3.5 months	10	40%	15	60%		
	4 months	6	60%	4	40%		
	5 months	3	60%	2	40%		
	6 months	3	75%	1	25%		

4.3.9 Infant's sex association with EBF

Infant's sex (p=0.622) was found not to have a noteworthy statistical association with exclusive breastfeeding, contrasting with a study that Kimani et al. (2014) carried out. They found out that child's sex was associated with EBF, where male infants were more likely to be weaned earlier than their female equivalents because of the perceived notion that male children consume more and need to be stronger.

Table 4.19: Infant's sex association with EBF

Variable	Category	Did the baby feed on any of the following liquids in the last 24 hours?			
		Yes	No	Pearson chi	P value

						square	
		N	%	N	%		
Infant's sex	Male	12	36.4%	21	63.6%	0.244	0.622
	Female	13	31%	29	63.6%		

4.4 Objective 2: To establish the level of knowledge and practice of EBF among working mothers in the Kangemi informal settlement.

The mothers' knowledge and practice of EBF was sought by questions on definition, duration of breastfeeding, mother's knowledge of the benefits of EBF and breast milk, strategies of boosting breast milk production, and early practices that support the success of exclusive breastfeeding, EBF Practice and family support of the practice. In this study, knowledge was analyzed using two measures of dispersion: the mean and the coefficient of variation. A high mean value with five (5) being the highest value meant that most respondents agreed with a statement. In contrast, a low value meant that majority disagreed with a statement. Analysis using the coefficient of variation meant that the higher the coefficient of variation (closer to 100%), the greater the level of dispersion around the mean. The interpretation is that a lower coefficient of variation is better because it means the spread of data values is low relative to the mean hence more acceptable. See table 4.22 through to table 4.26 below.

Note: for tables table 4.22 through to table 4.26 below, SA = strongly agree, A=agree, N=neutral, D=disagree, SD= strongly disagree.

4.4.1 Definition of exclusive breastfeeding

Most (94%) of the mothers know what exclusive breastfeeding means, that is, feeding an infant with breast milk only for the first six months of life except for medicines. The high knowledge levels can be attributed to the high ANC clinic attendance, and other strategies meant to promote EBF as outlined earlier in the report and as mentioned by the nutritionist in charge of the health center.

Table 4.20 Definition of exclusive breastfeeding

Definition of EBF		
	Yes	No
To feed an infant	71	4

with breast milk only for 6 months.	(94.7%)	(5.3 %)

4.4.2 Knowledge of the recommended duration of EBF

Most (94.7%) of the respondents knew that the recommended duration of exclusive breastfeeding is six months. This study found that there was universal knowledge about EBF and its duration.

However, the rate of EBF was 66.7%. The study findings are similar to another study carried out in Tema, Ghana, which revealed a universal knowledge of EBF and a 66% exclusively breastfeeding rate. (Asare, Preko, Baafi, & Dwumfour-Asare, 2018). This knowledge alone is not enough to inspire practice. Other factors (e.g. maternal occupation) as found by this study, seem to play a role in a mother's decision to exclusively breastfeed.

Table 4.21: Knowledge of the recommended duration of EBF

Recommended EBF duration		
	Knows	Does not know
6 months	71 (94.7%)	4 (5.3 %)

4.4.3 Knowledge about benefits of breast milk

Knowledge about the benefits of breast milk was explored using three statements; that breast milk has all the nutrients that the baby needs for the first six months (mean= 4.45, CV=18%), that it contains antibodies that help fight diseases (mean=4.7, CV=14%) and that it boosts immunity (mean=4.6, CV=16%). This implies that mothers associated breast milk more with health benefits than satiety. The coefficient of variation (CV) shows that the results were comparable to 18%, 16 %, and 14%, respectively, implying that most mothers knew about breast milk's benefits to the baby. The high knowledge levels could be attributed to the Baby-Friendly Hospital and Community Initiatives, high attendance for the antenatal clinics and child wellness clinic, where information on exclusive breastfeeding is shared.

Table 4.22 Mothers' knowledge about the benefits of breast milk to the baby

Statement	N (%) Score							
	SA	A	N	D	SD	mean	Std Dev.	CV (%)
It has all the nutrients a baby needs to be fully nourished for the first 6 months	48 64.0%	14 18.7%	12 16%	1 1.3%	0 0%	4.45	.810	18 %
It contains antibodies that help the baby fight diseases	62 82.7%	4 5.3%	9 12%	0 0%	0 %	4.7	0.67	14%
It has antioxidants that help boost immunity	53 70.7%	11 14.7%	11 14.7%	0 0%	0 0%	4.6	0.74	16%

4.4.4 Strategies for boosting breast milk production

Five elements assessed mothers' knowledge on how to boost breast milk production: taking a balanced diet, taking enough fluids, minimizing stress and disruptions and breastfeeding on demand, and manually expressing breast milk. The most known ways of boosting milk production were taking enough fluids (mean=4.82, CV=11%) and taking a balanced diet (mean=4.82, CV= 11%), followed by minimizing stress and disruptions (mean=4.40, CV=17.7%); breastfeeding on demand (mean=4.04, CV 22%); and manually expressing breast milk (mean=3.12, CV=19%). Most mothers agreed that taking many fluids and a balanced diet

increases milk production as the means indicates, perhaps because it is what is traditionally known and often insisted on during maternity ward rounds and subsequent post-partum clinics.

There was a slight variation in knowledge across the statements, as shown by the CVs. A significant number of mothers did not agree with all strategies for boosting breast milk production. For example, manually expressing breast milk was not agreed upon by the majority, as most were neutral, perhaps because it is frowned upon by culture. Most do not have the necessary facility for storage after expressing, and it generally needs much commitment.

"I have tried to express breast milk before but only a small amount came out and I gave up, furthermore I don't own a fridge to store the milk" (Mother, Kangemi).

Table: 4.23 Strategies for boosting breast milk production

Strategy	N (%) Score					Mean	Std Dev.	CV (%)
	SA	A	N	D	SD			
manually expressing breast milk	5 6.7%	2 2.7%	66 88%	1 1.3%	1 1.3%	3.12	0.592	19%
taking a well-balanced diet	71 94.7%	1 1.3%	3 4.0%	0 0%	0 0%	4.82	0.554	11%
drinking enough fluids throughout the day	71 (94.7%)	1 (1.3%)	3 (4.0%)	0 (0%)	0 (0%)	4.82	0.554	11%
breastfeeding on demand	31 (41.3%)	17 (22.7%)	26 (34.7%)	1 (1.3%)	0 0%	4.04	.907	22%
Minimizing stress and disruptions	50 66.7%	13 (17.3%)	11 (14.7 %)	1 (1.3%)	0 (0%)	4.40	.795	18%

4.4.5 Advantages of EBF to the baby

The advantages of EBF were assessed through three statements: EBF reduces infant and child mortality; protects the baby from diarrhea and other infections; reduces the risk of obesity and chronic disease in adulthood.

The most known advantage of exclusive breastfeeding by the respondents, according to the means, was that it protects the baby from diarrhea and other infections (mean=4.61, CV= 21%) followed by reducing the risk of chronic disease in adulthood (mean =4.05, CV=24%) and reducing infant and child mortality (mean=3.68, CV=21%). The coefficient of variation shows that the results were comparable and that most mothers agreed with all three statements.

Table 4.24 Advantages of EBF to the baby

Advantages	N (%) Score					Mean	Std Dev.	CV (%)
	SA	A	N	D	SD			
reduces infant and child mortality	15 (20%)	21 (28%)	39 (52%)	0 0%	0 0%	3.68	.791	21%
protects the baby from diarrhea and other infections	58 (77.3%)	5 (6.7%)	12 (16%)	0 (0%)	0 (0%)	4.61	.751	16%
reduces the risk of obesity and chronic disease in adulthood	36 (48%)	7 (9.3%)	32 (42.7%)	0 (0%)	0 (0%)	4.05	.957	24%

4.4.6 Advantages of EBF to the mother

The advantages of EBF to the mother were assessed using four statements: it is a contraception method; less expensive; it helps the mother lose weight, and it reduces the risk of ovarian and breast cancer.

The majority of the respondents, according to mean computation, agreed that the advantages of exclusive breastfeeding to the mother are that it is less expensive (mean=4.64, CV=16%); it is a contraception method (mean 4.24, CV=17.8%), it helps the mother lose weight (mean=4.133,

CV=24%). The least known advantage was that it reduces the risk of ovarian and breast cancer (mean =3.79, CV=21%). The dispersion around the mean was comparable, although some statements, for example; "helps the mother lose weight," had a higher CV because one respondent disagreed with the statement as she had not lost weight even after practicing EBF.

"I have not lost weight four months postpartum despite practicing exclusive breastfeeding" said one of the respondents (Mother, Kangemi).

Reducing the risk of ovarian and breast cancer also had a higher CV because most mothers neither agreed nor disagreed with the statement.

"I have not heard before that exclusive breastfeeding reduces the risk of ovarian and breast cancer but I'm aware that it is a contraception method because it delays menstruation" (Mother, Kangemi).

Table 4.25 Advantages of EBF to the mother

Advantages	**N (%) Score**					**Mean**	**Std Dev**	**CV (%)**
	SA	A	N	D	SD			
Contraception method	42 (56%)	9 (12%)	24 (32%)	0 (0%)	0 (0%)	4.24	0.756	17.8%
Less expensive	60 (80%)	3 (4%)	12 (16%)	0 (0%)	0 (0%)	4.64	0.746	16%
Helps mother lose weight	39 (52%)	9 (12%)	26 (34.7%)	1 (1.3%)	0 (0%)	4.133	0.99	24%
Reduces the risk of ovarian and breast cancer	17 (22.7%)	23 (30.7%)	35 (46.7%)	0 (0%)	0 (0%)	3.76	0.80	21%

4.4.7 Knowledge on how to continue EBF when separate from the baby

Knowledge by respondents on how to continue exclusive breastfeeding when separated from the baby was analyzed through three statements: "Expressing by hand-pump and storing breast milk to be given later," "feeding the baby with cow's milk," and "feeding the baby with infant formula."

The most agreed-on statement was “expressing by hand-pump and storing breast milk to be given later” (mean =3.52, CV=32%), followed by feeding the baby with cow's milk (mean=2.9, CV= 47%) and feeding the baby with infant formula (mean=2.89, CV=48%). The mean results were moderate, with all statements attracting scores across the 5-point Likert scale ranging from strongly agree, agree, neutral, disagree, and strongly disagree. The study found that most mothers did not express breast milk for their babies for various reasons. Some mothers would want to express, but they claimed that storage was an issue as they did not have a refrigerator and were unsure how long breast milk could last at room temperature. Others claimed that caregivers would not accept handling breast milk due to personal and cultural beliefs. On giving cow’s milk, a significant percentage of the mothers agreed that it was acceptable when one is away from the baby because they claimed that they could not express enough milk to feed the baby for the hours they were away. It was the same case with feeding the baby with infant formula.

A key informant also mentioned that there was a belief among mothers that breast milk spoils if they spend a whole day without breastfeeding; hence some of them express and dump the milk after spending long hours away from the baby. The coefficient of variation shows that the results were not comparable with expressing by hand-pump and storing breast milk to be given later (32%), having a lower CV than feeding the baby with cow's milk (47%) and feeding the baby with infant formula (48%). The latter two were comparable, and the higher coefficient of variation (close to 50%) shows that the scores were almost divided equally among the respondents.

Table 4.26 Knowledge on how to continue EBF when separate from the baby

Strategies	N (%) Score					Mean	Std Dev.	CV (%)
	SA	A	N	D	SD			
expressing by hand, pump, and storing breast milk to	20 26.7%	11 14.7%	37 49.3%	2 2.7%	5 6.7%	3.52	1.119	32

be given later								
feeding the baby with cow's milk	14 (18.7%)	13 (17.3%)	11 (14.7%)	26 (34.7%)	11 (14.7%)	2.9	1.367	47
feeding the baby with infant formula	15 (20%)	10 (13.3%)	14 (18.7%)	24 (32%)	12 (16%)	2.89	1.381	48

4.4.8 Mothers' early practices of EBF

The study found that early practices that support the success of exclusive breastfeeding were done by most mothers;(70.7%) of the mothers-initiated breastfeeding within one hour after delivery, 96% had skin-to-skin contact with the baby after birth, 98% of the mothers practiced rooming in with their baby.

"*The high rate of rooming in is partly due to cultural belief that newborns must accompany their mothers all the time and due to the informal settlement set up where most houses are single rooms hence there is no option to separate mother and infant (CHV, Kangemi)".*

Majority (81.3%) reported breastfeeding as the standard method of feeding an infant with breast milk, while a few (17.3%) reported having used both breastfeeding and bottle feeding to feed the baby with breast milk, and a large majority (80%) breastfed on demand.

…." breastfeeding on demand also known as baby-led feeding is one of the practice that leads to optimal exclusive breastfeeding as it makes sure the baby is well nourished, latches well on the breast and bonds well with the mother.."(Nutritionist, Kangemi HC).

Table 4.27 Early practices of EBF

Practice	Frequency	Percent
How soon did your baby start breastfeeding after birth?		
within 1 hour	53	70.7%
after 2 hours	13	17.3%
after 3 hours	9	12%
Prelacteal feeds		
Yes	9	12%

No	66	88%
Type of feed		
Infant formula	7	9.3%
None	68	90.7%
Skin contact after birth		
Yes	72	96%
No	3	4%
24 hours rooming in		
Yes	74	98%
No	1	1.3%
Method of feeding breast milk		
bottle	1	1.3 %
breastfeeding	61	81.3%
breastfeeding and bottle feeding	13	17.3%
Feeding intervals		
on demand	60	80%
hourly	10	13.3%
after 2 hours	3	4%
after 3 hours	2	2.7%
Mixed feeding		
Yes	25	33.3 %
No	50	66.7%

4.4.9 EBF practice

A 24-hour recall question was asked of the mothers to establish whether mothers were practicing exclusive breastfeeding. Of them, 50 (66.7%) reported only feeding their infants with breast milk (EBF), while 25(33.3%) reported having given other feeds. The mothers cited several reasons for practicing mixed feeding, including mothers' economic situation, whereby some had limited alternative infant feeding options because nutritious infant foods are costly. These findings agree with Violet Naanyu's (2009) study that young mothers tend to exclusively breastfeed because

they don't have an alternative feeding option. The other reason was peer influence and cultural beliefs, as cited by one key informant.

…." Some mothers fail to achieve optimal EBF not because they don't know what it is and its benefits but because of peer influence and cultural beliefs such as breast milk alone is not sufficient for a baby boy; newborn babies must be given herbs and water to wash off their stomachs and babies have always been given other feeds at an early age and nothing happened to them." (CHV, Kangemi).

According to the key informants, the high rate of exclusive breastfeeding reported in this study could be attributed to three factors: the success of BFHI and BFCI, the lack of proper alternatives to breastfeeding, and the Hawthorne effect.

…" The Baby-Friendly Hospital and Community Initiatives have played a major role in the success of exclusive breastfeeding as mothers are equipped with exclusive breastfeeding information right from the antenatal clinic, maternity ward, child wellness clinic, to the households after delivery. On the other hand, some mothers practice exclusive breastfeeding because they cannot afford any other infant feeds due to harsh economic conditions" (CHV and nutritionist, Kangemi).

4.4.10 Family and spouse support of exclusive breastfeeding

The study sought to determine whether mothers received support in their efforts to breastfeed exclusively and the kind of support. Results show that most mothers received support from their families (92%) in the form of moral or moral and financial support and only a few (8%) reported not having any support. The ones who didn't get support reported that they coped by doing mixed feeding and going back to work early. The majority (56%) reported to have learned about exclusive breastfeeding at the hospital, followed by (32%) who reported to have learned from both hospital and peers, (5.3%) reported to have learned from peers only, and 6.7% had not heard about exclusive breastfeeding. A majority (88%) of the respondents reported having been trained about exclusive breastfeeding either from the hospital or community-based program. (See table 4.28).

Table 4.28 breastfeeding support

Variable	Frequency	Percent
Breastfeeding support from your family (n=75)		
Yes	69	92%
No	6	8%
If no to question above, how are you coping?		
Mixed feeding	4	5.3 %
Going back to work and giving the baby other feeds	11	14.7 %
Not applicable	60	80 %
Who feeds the baby when you are not available?		
Family members (father, grandmother and siblings)	12	15.9 %
Outsourced help (House help, Daycare attendant, Day burg)	23	30.7 %
N/A	40	53.3 %
Where did you learn about exclusive breastfeeding?		
Hospital	42	56%
Peers	4	5.3%
Hospital and peers	24	32%
Not heard about it	5	6.7%
Breastfeeding training		
Yes	66	88
No	9	12
Community training program		
Yes	66	88%
No	9	12%

4.5 Objective 3: To establish work conditions that influence EBF practices among working mothers in the informal economy.

Work conditions were studied to determine how they affected the respondents' exclusive breastfeeding. Almost half of the respondents (49.3%) reported that their work affects their efforts to breastfeed their infants exclusively. Of those who reported being affected, (41.3%) said that they could not carry the babies to the workplace and did not have enough breast milk to express for the baby, 6.7% claimed breastfeeding is challenging as they attend to customers, so they opt to leave the baby at home, and (2.7%) reported working long hours.

Those who reported that their work did not affect their efforts to exclusively breastfeed (50.7%) gave reasons such as being able to carry the baby to their workplace (18.7%). Others had taken a break from their businesses to take care of the baby (18.7%), while others were able to go home during breaks and breastfeed (5.3%), and a small percentage (2.7%) was on maternity leave. Most respondents who could carry their babies to work reported no privacy (17.3%), while others (14.7%) reported privacy for breastfeeding. Regarding coworkers' support, (20%) reported that they were supported, while 2.7% reported no support. 30% of the mothers who left their

babies at home reported being away from their babies for 6 to 12 hours, while 12% reported being away for less than 6 hours.

Other challenges reported by the respondents to influence exclusive breastfeeding at the workplace include cold, dust, noise, and disruptions (9.3%) and smoke and hair treatment chemicals (4%). No respondent reported to have received any assistance from the county council (See table below). The findings were confirmed by one key informant who noted that one of the main challenges she has observed that the respondents go through is mothers having to go back to work early to earn a living for the family leaving little time to exclusively breastfeed their babies.

"Most mothers go back to work at 3 months and that is the time they start doing mixed feeding and most don't attend come to the clinic until 6 months which is one of the reasons there were not so many respondents in the age group 3.5 to 6 months, and it is from this age that they start mixed feeding" (Nutritionist, Kangemi).

These study findings are like several other studies' findings. According to a study carried out by WIEGO in 2016, across five countries: Brazil, Ghana, India, South Africa, and Thailand, street vendors reported that it was challenging to attend to customers and breastfeed simultaneously. They also cited exposure to natural elements such as rain and hot sun, which meant they could not bring their babies to work. Another study that found similar findings was by Kimani-Murage et al. 2014 which found that most urban poor mothers rely on manual labor working as daytime domestic workers, which is a complex situation for bringing an infant along.

Key informant's views echo those of the respondents that the type of work a mother does affects the decision to exclusively breastfeed their infants.

"A significant number of mothers work as domestic workers in the affluent neighborhoods of Kangemi and as casual laborers where they work long hours and can't take their children to work with them, hence start complementary feeding as soon as they resume work". The concept of expressing breast milk and leaving it behind to be fed to the infant by a caregiver is also not well embraced due to personal and cultural beliefs" (CHV,Kangemi).

Table 4.29 Work conditions influencing EBF practices among working in the informal economy.

Variable	Frequency	Percent
Does your work affect your exclusive breastfeeding efforts?	37	49.3%
Yes	38	50.7%
No		
If yes, how?		
I cannot carry the baby with me to the workplace, and I do not have enough breast milk to express for the baby.	31	41.3 %
I work long hours	2	2.7%
It is a challenge to breastfeed as I attend to the customer, so I leave the baby behind	5	6.7%
Not applicable	37	49.3%
If not, explain.		
I can carry the baby to my workplace.	14	18.7%
I have taken a break from my business to take care of baby	14	18.7%
I can rush home during breaks and breastfeed	4	5.3%
I am on maternity leave	2	2.7%
Not applicable	41	54.7%
Privacy to EBF your child at your workplace		
Yes	11	14.7%
No	13	17.3%
N/A	51	68%
Coworker's support		
Yes	15	20%
No	2	2.7%
N/A	58	77.3%
How many hours are you from the baby?		
<6	9	12%
6-12	23	30.7%
N/A	43	57.3%
What else at our workplace affects your EBF journey?		
Cold/dust/noise/disruptions	7	9.3%
Smoke and hair treatment chemicals	3	4%
N/A	65	86.7%
Any assistance from the municipal council		
No	22	29.3%
N/A	53	70.7%

4.6 Objective 4: To identify the challenges and opportunities that lactating mothers have in relation to practicing EBF.

The study sought to identify challenges and opportunities working mothers in the Kangemi informal settlement have that could negatively or positively affect exclusive breastfeeding. A significant number of the respondents reported having taken maternity leave, with the majority taking three (3) months. Most of those who took maternity leave reported that they were not paid (18%) reported that they could carry their babies to their workplace, while (28%) reported they could not. Of those who could carry their babies with them, (17%) reported that they had enough time to breastfeed, while only one reported they did not have enough time. Of the respondents who could carry their babies to their workplace, (10.7%) reported that their work environment was not clean and safe for breastfeeding a baby below six months, while 8% reported that it was clean and safe. Concerning complaints by customers (12%) reported that their customers did not complain of divided attention if the mother breastfed at the workplace, with (6.7%) reporting complaints. (See table 4.30 below).

The study findings are like findings in a study carried out in India by Horwood, C et al. (2017), which found that informal work offered some women the freedom to breastfeed their babies exclusively. In contrast, the findings are different from the same study where some mothers found it challenging to manage personal care, childcare, and work. Other mothers had to make a difficult choice of returning to work and leaving their infants under the care of someone else or sacrificing income and staying at home to care for the child.

Key informant views revealed that the major challenges to achieve optimal exclusive breastfeeding in the informal settlement were cultural beliefs surrounding infant nutrition especially among the Luhya community who are the predominant community residing in the study area. There were beliefs that an infant is supposed to be given certain herbs to “open the stomach” which does conform to the principles of EBF. There was also the practice of giving salty water or grip water to infants who had colic as they were believed to have a stomachache. The other challenge pointed out by the KIs was perceived breast milk insufficiency.

"Some mothers even despite having all the information about exclusive breastfeeding could still not comprehend how breast milk alone can nourish an infant hence opted to give complementary feeds. This was mainly due to influence from older family members and peer influence" (CHV,Kangemi).

Table 4.30 Challenges and opportunities that lactating mothers have related to EBF practice.

Variable	Frequency	Percent
Did you go on maternity leave?		
Yes	26	34.7%
n/a	49	65.3%
If yes, how long was the maternity leave?		
2 months	2	2.7%
3 months	21	28%
n/a	49	65.3%
6 months	3	4%
If yes to the question above, were you paid during the leave?		
Yes	8	10.7%
No	18	24%
n/a	49	65.3%
Are you able to carry the baby to your workplace?		
Yes	14	18.7%
No	21	28%
N/A	40	53.3%
If yes, do you have enough time to EBF your baby?		
Yes	13	17.3%
No	1	1.3%
N/A	61	81.3%
If yes, is your work environment clean and safe for breastfeeding a baby below 6 months?		
Yes	6	8%
No	8	10.7%
n/a	61	81.3%
Complaints of divided attention.		
Yes	5	6.7%
No	9	12%
N/a	61	81.3%

CHAPTER FIVE
SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Summary of findings

5.1.1 Objective 1: To assess how maternal and infant socio-demographic characteristics impact exclusive breastfeeding among working mothers in the Kangemi informal settlement.

With regard to the impact of socio-demographic characteristics of working mothers and infants on EBF, data on socio-demographic characteristics were analyzed including age, occupation, religion, education, and ANC attendance frequency, place of delivery, infant's age and sex. It was notable that most mother respondents were in the 25-29 age group, followed by the 20-25 and 30-34 age groups, respectively. Another notable finding was that infant's age had a statistically significant relationship with exclusive breastfeeding where younger infants were more likely to be exclusively breastfed than older infants.

5.1.2 Objective 2: To establish the level of knowledge and early practice of EBF among working mothers in the Kangemi informal settlement.

This was determined by various variables including the definition and duration of exclusive breastfeeding; knowledge about the benefits of breast milk and exclusive breastfeeding to the mother and child**;** strategies of boosting breast milk supply; knowledge of how to continue EBF when separate from the baby; mother's practice of EBF and breastfeeding support. The study found that there was universal knowledge about EBF and its duration; most mothers were conversant with the benefits of breast milk to the child and exclusive breastfeeding to the mother and child. Most mothers understood strategies for boosting breast milk supply, while the knowledge of how to continue EBF when separate from the baby was fairly understood. Early EBF practices that support the success of exclusive breastfeeding were done by most of the mothers, with the majority initiating breastfeeding with one hour after delivery, having skin to skin contact with the baby after birth, and practicing rooming in with their baby. Most mothers reported having received breastfeeding support from their families.

The relatively high rate of EBF practice (66.7%) discovered in this study could be explained by the fact that the Baby-Friendly Hospital Initiative (BFHI) and the Baby-Friendly Community Initiative (BFCI) strategies adopted by the government to promote EBF at the hospital and in the community have fairly been adopted at the primary healthcare level. A significant majority of respondents reported that they knew what EBF means and that they received EBF training at the hospital during the antenatal clinic and at their households through the practice of 24 hours rooming in with their infants. The rate could also be attributed to the difference in sample size. For example, the Kenya Demographic and Health Survey (KDHS) of 2014, which found a 61% prevalence rate, studied all mothers in the country, and this study was done in one informal settlement. Economic instability was another reason for the higher rate as mothers opted to breastfeed exclusively as they could not afford other foods.

The study findings are comparable to other studies. According to the Kenya Demographic and Health Survey (KDHS) of 2014, 61% of children under six months were exclusively breastfed, and, in another study carried out in the study area, Kangemi, in 2014, 45.5% of infants were exclusively breastfed (Ayisi, Thuita, Njeru, & Wakoli, 2014). This study found a higher rate of 66.7% than the two previous studies. HOWEVER, the EBF rate in this study is almost like Kumar, Acharya, Acharya, Shravani, & Ramya's (2017) study, which was conducted in Northwest India, reported that 68% of respondents from their study did practice EBF.

This study found that there was universal knowledge about EBF and its duration and a prevalence rate of 66.7%, which is like a study carried out in Tema, Ghana, which revealed a universal knowledge of EBF and a 66% prevalence rate (Asare, Preko, Baafi, & Dwumfour-Asare, 2018).

5.1.2 Objective 3: To establish work conditions that influence EBF practices among lactating mothers working in the informal economy.

Concerning work conditions that influence EBF, this study found that a significant majority of the respondents' efforts to breastfeed exclusively were affected by work conditions. The main conditions mentioned to affect EBF efforts among the mothers negatively were the difficulty of carrying the baby to the workplace; insufficient breast milk to express and leave behind; the challenge of balancing breastfeeding and attending to customers simultaneously; and working for

long hours. Other conditions reported by the respondents to influence exclusive breastfeeding at the workplace include cold, dust, noise, disruptions, smoke, and hair treatment chemicals.

5.1.3 Objective 4: To identify the challenges and opportunities working mothers at Kangemi informal settlement have related to EBF practice.

With respect to challenges and opportunities that working mothers in Kangemi face, the study found several challenges, such as difficulty in balancing the need to earn an income and care for themselves and their children. It is also a tough call to decide between returning to work and delegating the care of their infants to someone else or staying at home to care for the child and forfeiting income. On the other hand, some mothers had opportunities such as carrying their babies to their workplaces, having enough time to breastfeed while at the workplace, and flexibility in work and business. These advantages could allow the mothers to take a break from business to breastfeed their babies and get support from their colleagues at work. These findings align with findings in a study carried out in India by Horwood, C. et al. (2017), which found that informal work offered some women in the study independence and flexibility to breastfeed their babies exclusively.

5.2 Conclusion

Knowledge of exclusive breastfeeding was good. A significant number of the respondents did practices that support exclusive breastfeeding. Most respondents received support from their families. A significant majority reported work conditions to affect exclusive breastfeeding efforts. Significant challenges affecting exclusive breastfeeding were time constraints, an unconducive work environment for a baby, unpaid maternity leave, which meant mothers were obligated to go back to work early, and loss of customers due to divided attention. Some mothers had opportunities that supported exclusive breastfeeding and enjoyed flexibility of work and business, which allowed them to take a break from business to breastfeed their babies and get support from colleagues at work, allowing them to continue exclusive breastfeeding without losing customers.

5.3 Recommendations

5.3.1 Policy Recommendations

a) Sensitization and awareness campaigns about exclusive breastfeeding should be done on the visual, print, and social media to improve the uptake of optimal exclusive breastfeeding practices.

b) Government and relevant stakeholders should develop policies that safeguard mothers working in the informal economy in terms of making sure they get paid maternity leaves and have designated breastfeeding booths or crèches where they can either breastfeed or leave their babies while they work.

c) The government should motivate community health volunteers through regular training and remunerations to reach more mothers in the community.

d) The government should recruit additional nutrition officers in the facility to ease the workload and improve mothers' training at the antenatal clinic, maternity ward, and child wellness clinics to enhance mothers' early preparation and training about EBF, improving its uptake and sustainability.

5.3.2 Recommendations for further research

The study recommends;

a) A study on the role played by the hospital nursing and support staff in influencing the practice of exclusive breastfeeding among mothers in the informal settlements. It was noted that nursing and support staff did not have detailed information on EBF and this would translate to the mothers as they are in contact with the mothers who also seek information from them. Such a study therefore, would help policy makers invest in training, education and professional development of health-care providers in optimal infant and young child feeding practices, including protection, promotion and support for exclusive breastfeeding.

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APPENDICES

Appendix A: Questionnaire for Mothers

Introduction and consent

Hello, my name is _____ and I am a Master of Arts (Rural Sociology and Community Development) student at the University of Nairobi. I am conducting research on "**FACTORS THAT INFLUENCE EXCLUSIVE BREASTFEEDING PRACTICE AMONG WORKING MOTHERS AT KANGEMI INFORMAL SETTLEMENT, NAIROBI**." The information collected will be treated as highly confidential and will in no way be disclosed to any third party. I therefore request you to feel free and provide honest answers without fear of disclosure.

[ ] Respondent agrees to be interviewed (Tick)
Full names of interviewer: _____
Interviewer's phone number(s): _____
Date of interview (dd/mm/yyyy): _____

QUESTIONNAIRE NO: …….
DATE… …….
CLINIC NO… …….

A. BACKGROUND INFORMATION

Mother's information

1. Area of residence of the mother ……

2. Which of the following categories represent your age category (tick only ONE)

   a. 15 to 19 years ☐
   b. 20 to 24 years ☐
   c. 25 to 29 years ☐
   d. 30 to 34 years ☐
   e. 35 to 39 years ☐
   f. 40 to 44 years ☐
   g. 45 to 49 years ☐

3. What is your marital status?

   a. Single ☐
   b. Married ☐

4. How many children do you have?

5. Which of the following best describes your religious faith?

   a. Christian protestant ☐
   b. Christian catholic ☐
   c. Muslim ☐
   d. Others (specify) ☐

6. What is your highest level of education attained?

   a. None ☐
   b. Primary but not completed ☐
   c. Primary (completed) ☐
   d. Secondary but not completed ☐
   e. College and above ☐

7. What is your occupation?

a. Street vendor ☐
b. Domestic worker ☐
c. Market stall employee ☐
d. Casual laborer ☐
e. Waste picker ☐
f. Market trader ☐
g. Others (specify) …….

8. What is your ethnicity? .....

9. Did you attend Antenatal clinic (ANC)?

a. Yes ☐
b. No ☐

10. If yes to (question 10), how many visits? ……

11. Place of delivery

a. Hospital ☐
b. Home ☐
c. Other (specify) …….

Infant's information

1. How old is the baby? (In months) …….

2. What is the sex of the baby?

a. Male ☐
b. Female ☐

B. Knowledge Questions

1. What is the first food that a newborn baby should feed on?

a. Breast milk ☐
b. Soup ☐
c. Mashed pumpkin ☐
d. Water ☐

e. Cow's milk ☐

f. Infant formula ☐

g. Herbs ☐

2. What does exclusive breastfeeding mean?

……

3. What is the recommended duration of EBF? (Tick only one)

a. 1 month ☐

b. 2 months ☐

c. 3 months ☐

d. 4 months ☐

e. 5 months ☐

f. 6 months ☐

4. What are the benefits of breast milk to the baby?

a. It has all the nutrients that a baby needs to be fully nourished for the first 6 months of life. (Tick only one)

S.A ☐ Agree ☐ Neutral ☐ Disagree ☐ S.D ☐

b. It contains antibodies that help baby fight diseases

S.A ☐ Agree ☐ Neutral ☐ Disagree ☐ S.D ☐

c. It has antioxidants that help boost immunity.

S.A ☐ Agree ☐ Neutral ☐ Disagree ☐ S.D ☐

5. What are the different things you know that a mother can do to boost her milk supply? (Tick only one)

a. Manually expressing breast milk

S.A ☐ Agree ☐ Neutral ☐ Disagree ☐ S.D ☐

b. Taking a well-balanced diet

S.A ☐ Agree ☐ Neutral ☐ Disagree ☐ S.D ☐

c. Drinking enough fluids during the day.

S.A ☐ Agree ☐ Neutral ☐ Disagree ☐ S.D ☐

d. Breastfeeding on demand

S.A ☐ Agree ☐ Neutral ☐ Disagree ☐ S.D ☐

e. Minimizing stress and disruptions

S.A ☐ Agree ☐ Neutral ☐ Disagree ☐ S.D ☐

6. What are the advantages of EBF to the baby?

a. It reduces infant and child mortality more than any preventive intervention. (Tick only one)

S.A ☐ Agree ☐ Neutral ☐ Disagree ☐ S.D ☐

b. Protects the baby from diarrhea and other infection. (Tick only one)

S.A ☐ Agree ☐ Neutral ☐ Disagree ☐ S.D ☐

c. Protects the baby against obesity and chronic diseases in adulthood

S.A ☐ Agree ☐ Neutral ☐ Disagree ☐ S.D ☐

7. What are the benefits of EBF to the mother?

a. It reduces the risk of cancers of the ovary and breast. (Tick only one)

S.A ☐ Agree ☐ Neutral ☐ Disagree ☐ S.D ☐

b. Helps in spacing children as prolonged lactation delays menstruation. (Tick only one)

S.A ☐ Agree ☐ Neutral ☐ Disagree ☐ S.D ☐

c. Less expensive than infant formula hence helps save family resources. (Tick only one)

S.A ☐ Agree ☐ Neutral ☐ Disagree ☐ S.D ☐

d. Helps the mother lose weight she gained during pregnancy.

S.A ☐ Agree ☐ Neutral ☐ Disagree ☐ S.D ☐

8. Often a mother needs to be separated from their baby due to work. How could a mother continue EBF in such a situation?

a. Hand expressing or expressing breast milk using a breast pump, storing it and leaving it behind with a caregiver to give the breast milk to the baby. (Tick only one)

S.A ☐ Agree ☐ Neutral ☐ Disagree ☐ S.D ☐

b. Feeding the baby with cow's milk. (Tick only one)

S.A ☐ Agree ☐ Neutral ☐ Disagree ☐ S.D ☐

c. Feeding the baby with infant formula (Tick only one)

S.A ☐ Agree ☐ Neutral ☐ Disagree ☐ S.D ☐

C. Practice Questions

1. How soon did your baby start breastfeeding after birth? (Tick only one)

a. Within 1 hour ☐
b. After 2 hours ☐
c. After 3 hours ☐

2. Did your baby receive any feeds before initiation of breastfeeding?

a. Yes ☐
b. No ☐

3. If yes to question above, which feed? …….

4. Did you hold your baby close the skin immediately after birth?

a. Yes ☐
b. No ☐

5. Did you practice 24 hours rooming in with your baby?

a. Yes ☐
b. No ☐

6. After how long should a baby younger than six months be fed with breast milk? (Tick only one)

a. On demand ☐
b. Hourly ☐
c. After 2 hours ☐

5. There are several ways to feed breast milk to the baby. Which of the following methods did your baby use yesterday?

a. Cup and spoon ☐
b. Bottle ☐
c. I breastfed him/her ☐
d. Breastfed by a wet nurse ☐

6. Did the baby feed on any of the following liquids in the last 24 hours?

a. Plain water ☐
b. Soup ☐
c. Juice ☐
d. Yoghurt ☐
e. Porridge ☐

D. Support questions

1. Do you get breastfeeding support from your family?
   a. Yes ☐
   b. No ☐
2. If **yes** to question number 1, what kind of support?

……

3. If **no** to question number 1, how are you coping?
4. Who feeds the baby when you are not available?
   a. Father ☐
   b. Grandmother ☐
   c. Other (specify) ……
5. Where did you learn about exclusive breastfeeding?
   a. Hospital ☐
   b. Peers ☐
   c. Print Media ☐
   d. Social Media ☐
6. Do you receive training on exclusive breastfeeding when you go for prenatal and postnatal clinic?
   a. Yes ☐
   b. No ☐
7. Is there a community-based training program about breastfeeding and infant and maternal nutrition and do you attend?
   a. Yes ☐
   b. No ☐

E. Work conditions questions

1. Does your work affect your exclusive breastfeeding efforts? If yes, how? If no, explain.
    a. Yes ☐

If yes, how?

…….

    b. No ☐

If no, explain.

…….

2. Is there privacy to exclusively breastfeed your child at work? (E.g., designated breastfeeding area /cubicles or rooms where mothers can comfortably breastfeed or express breast milk? (Market traders, street vendors, domestic workers).
    a. Yes ☐
    b. No ☐
3. Are your coworkers supportive of your exclusive breastfeeding efforts? (E.g., for street vendors and market traders, do other traders help you attend to a customer as you breastfeed?)
    a. Yes ☐
    b. No ☐
4. How many hours are you away from the baby in a day?
5. What else at your workplace affects the way you exclusively breastfeed your child?
6. Do you receive any assistance from the municipal council that would facilitate exclusive breastfeeding in your workplace? (Market traders, street vendors)

F. Challenges and Opportunities.

1. Did you get maternity leave? (Domestic workers/employed vendors)
    a. Yes ☐
    b. No ☐
2. If yes to the above question, how long was the maternity leave? ……
3. If yes to the above question, were you paid during the leave?

a. Yes ☐

b. No ☐

4. Are you able to carry the baby to work? (Street vendors, domestic workers, market traders)

   a. Yes ☐

   b. No ☐

5. If yes to question no. 4, do you have enough time to exclusively breastfeed your child?

6. If yes to the above question. Is your work environment clean and safe for breastfeeding a baby below 6 months?

   a. Yes ☐

   b. No ☐

7. Do your customers /employer complain of divided attention when you must breastfeed and attend to them at the same time? (Market traders, street vendors)

   a. Yes ☐

   b. No ☐

Appendix B: Key Informant Guide (Postnatal clinic nurse, Health centre nutritionist)

Introduction and consent

Hello, my name is _____ and I am a Master of Arts (Rural Sociology and Community Development) student at the University of Nairobi. I am conducting research on "**FACTORS THAT INFLUENCE EXCLUSIVE BREASTFEEDING PRACTICE AMONG WORKING MOTHERS AT KANGEMI INFORMAL SETTLEMENT, NAIROBI**."

The information collected will be treated as highly confidential and will in no way be disclosed to any third party. I therefore request you to feel free and provide honest answers without fear of disclosure.

[] Respondent agrees to be interviewed (Tick)

Full names of interviewer: _____

Interviewer's phone number(s): _____

Date of interview (dd/mm/yyyy): _____

What is your key role in the health facility /programme?

1. What have you observed as the main challenges that working mothers working in the informal settlement face to achieve optimal exclusive breastfeeding?
2. Is there an exclusive breastfeeding training programme in the facility?
3. If yes; are the materials, tools, and human resource adequate and how can they be enhanced?
4. Are there government policies that are geared towards promotion and support of exclusive breastfeeding amongst mothers in the informal economy?
5. If yes to question no. 5; how the policies can be strengthened to support EBF among working mothers in the informal settlements.

Appendix C: Key Informant Guide (community health worker/volunteer)

Introduction and consent

Hello, my name is _____ and I am a Master of Arts (Rural Sociology and Community Development) student at the University of Nairobi. I am conducting research on **"FACTORS THAT INFLUENCE EXCLUSIVE BREASTFEEDING PRACTICE AMONG WORKING MOTHERS AT KANGEMI INFORMAL SETTLEMENT, NAIROBI."**

The information collected will be treated as highly confidential and will in no way be disclosed to any third party. I therefore request you to feel free and provide honest answers without fear of disclosure.

[] Respondent agrees to be interviewed (Tick)

Full names of interviewer: _____

Interviewer's phone number(s): _____

Date of interview (dd/mm/yyyy): _____

Key informant guiding questions

1. What is your key role in the health facility /programme?
2. Is there a community-based programme that educates/trains mothers about exclusive breastfeeding?
3. If yes, what are the challenges that you have encountered during training?
4. In your opinion, what can be done to improve the practice of EBF in this community?
5. What opportunities can be explored to improve / enhance EBF in this community?

Appendix D: Time Plan/ Time Frame

	OCT 2020	NOV 2020	DEC 2020	JAN 2021	FEB 2021	MAR 2021	APR 2021	MAY 2021	JUN 2021	JUL 2021	AUG 2021	SEPT 2021	OCT 2021
TOPIC SELECTION AND PRESENTATION													
LITERATURE REVIEW													
PROPOSAL DEVELOPMENT													
PROPOSAL DEFENSE													
PROPOSAL CORRECTION AND REVISION													
LICENSING													
DATA COLLECTION													
DATA ANALYSIS & REPORT WRITING													
SUBMISSION OF REPORT													

Appendix E: Budget

Item	**Quantity**	**Price per each item**	**Total amount**
Folder	1	200	200
Biro pens	10	10	100
Notebooks	2	100	200
Pencils	5	10	50
Eraser	2	10	20
Sharpener	1	10	10
Ruler	1	20	20
Proposal printing	48 pages	5	240
Study tool Printing & photocopy	11pages	(9x75) x5/=	3375
Binding	1	50	50
Transport	20	250	5000
Total Amount			**9265**