DETERMINANTS OF EXCLUSIVE BREASTFEEDING AMONG MOTHERS WITH INFANTS AGED UNDER SIX MONTHS IN WADAJIR DISTRICT, BANADIR REGION - SOMALIA

MADINA ALI ABDIRAHMAN

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF PUBLIC HEALTH DEGREE IN INTERNATIONAL HEALTH AND DEVELOPMENT OF MOUNT KENYA UNIVERSITY

JUNE 2025

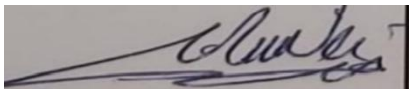
DECLARATION AND APPROVAL

Declaration

This thesis project is my original work and has never been presented for any academic award in any institution.

Name: Madina Ali Abdirahman …….

Reg. No. MPH/2021/73207…….

Signature:  Date: 10/06/2025……

APPROVAL

This thesis/project is being submitted for examination with our approval as university supervisors.

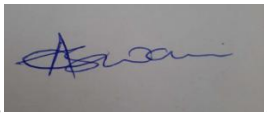
Name: Dr. Dominic Mogere, PhD……..

Institutional Affiliation: Senior Lecturer School of Public Health at Mount Kenya University

Signature  Date: 11/09/2025…….

Name: Dr. Anne Aswani Musotsi …….

Institutional Affiliation: Lecturer, Masinde Muliro University of Science and Technology, Department of Nutritional Sciences; School of Public Health, Biomedical Sciences & Technology

Signature…  ……Date: 10/09/2024

DEDICATION

I dedicate this piece of work to my family, children, husband, and complete family for their unwavering support during my studies.

ACKNOWLEDGEMENTS

First, I thank the Almighty ALLAH for his abundant blessings, care, strength, and health throughout the development of this thesis. Secondly, I would like to extend my deepest gratitude to my supervisors, Dr. Dominic Mogere and Dr. Anne Aswani Musotsi, for their continuous guidance during this thesis development. Their commitment to ensuring the completion of this work has been invaluable. I also express my sincere gratitude to the entire faculty at Mount Kenya University (MKU), particularly the lecturers and students of the Master of Public Health Department, for their everlasting assistance and unwavering support. Furthermore, I am deeply thankful to the staff at Wadajir Health facility, who have devoted their time to providing data, and information that has been crucial in supporting my thesis program. Finally, I equally share my appreciation with my contemporaries who have not been mentioned here but have played a pivotal role in their countless contributions.

ABSTRACT

Breastfeeding plays a vital role in achieving Sustainable Development Goals (SDGs), particularly SDG 2 on nutrition and SDG 3 on child mortality reduction. It provides essential nutrients and protection against illnesses. The World Health Organization (WHO) aimed to increase exclusive breastfeeding (EBF) rates in infants under six months to at least 50% by 2025 (Jones et al., 2015). Research linked over two-thirds of malnutrition-related under-five deaths to improper breastfeeding. In Somalia, the EBF rate was reported at 34% in 2020 Somali Demographic Health Survey (SDHS), contributing to a high under-five mortality rate of 111.5 per 1,000 live births. The United Nations Decade of Action on Nutrition (2016–2025) emphasizes optimal breastfeeding as a key priority, necessitating ongoing research and intervention. This study aimed to determine the prevalence and the determinants of EBF among infants under six months in Wadajir district, Banadir region, Somalia. The specific objective of this study was to assess the influence of knowledge and practices on exclusive breastfeeding practices among mothers with infants aged under six months in Wadajir District, Banadir Region – Somalia. A hospital-based cross-sectional study was conducted among mother-infant pairs seeking healthcare at Wadajir Health Center. Data were collected using structured questionnaires. Participants were informed about the study, assured of confidentiality, and voluntarily provided consent. SPSS was used for data analysis, and multiple analyses examined correlations between independent variables. The prevalence of Exclusive Breastfeeding (EBF) was 65%, below the WHO target. Maternal education significantly influenced EBF, with 73% of educated mothers correctly identifying the recommended duration. Key barriers included beliefs about insufficient breast milk (40%) and negative perceptions of colostrum (26%). Skin-to-skin contact was more prevalent among housewives (73%) than salaried employees (68%). Antenatal care visit (ANC) visits played a role, with 87% receiving health and nutrition messages, mainly from healthcare workers. Social factors such as lack of family support and early bottle feeding also impacted EBF. The study revealed that exclusive breastfeeding (EBF) regarding knowledge and practices; Housewives practicing skin-to-skin contact after birth were more likely to exclusively breastfeed for 5–6 months. About 73% of housewives reported skin-to-skin contact versus 68% of employed mothers. Conversely, 32% of employed mothers did not practice it, compared to 27% of housewives, highlighting lifestyle and time availability differences. Key barriers included maternal misconceptions about milk sufficiency, negative perceptions of colostrum, and cultural influences, while antenatal care (ANC) visits and skin-to-skin contact positively influenced EBF practices. Strengthening breastfeeding education, integrating comprehensive counseling in ANC visits, and involving family members in breastfeeding promotion can help overcome these barriers. Additionally, advocating for breastfeeding-friendly workplace policies and conducting further research on socio-cultural barriers will be essential in improving EBF rates and reducing child mortality in Somalia.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS AND ACRONYMS

EBF: Exclusive breastfeeding

ANC: Antenatal Care

SSA: Sub-Saharan Africa

MCH: Mother and Child Health Clinic

LMIC: Low Middle-Income Countries

SDGs: Sustainable Development Goals

NCD: Non-Communicable Disease

WHO: World Health Organization

MIYCAN: Maternal, Infant, and Young Child Adolescent Nutrition

IYCF: Infant and Young Child Feeding

UNICEF: United Nations Children's Education Fund

UNDAN: United Nations Decade of Action on Nutrition

EENC: Early Essential Newborn Care and

BFHI: Baby-friendly Hospital Initiative

KAP: Knowladge Attitude and Practice

CHAPTER ONE:

INTRODUCTION

1.1 Background to the study

One of the best strategies for ensuring a child's survival and well-being is breastfeeding. However, less than half of infants under six months old are breastfed exclusively, which is against World Health Organization (WHO)guidelines (*Jebena & Tenagashaw, 2022*). A baby's best food is breastmilk. It is clean, safe, and has antibodies that help guard against a variety of common childhood diseases. In addition to providing all of the energy and nutrients a baby requires during the first few months of life, breastmilk can supply up to half or more of a child's nutritional needs during the second half of the first year of life and up to one-third during the second year *(Ahishakiye et al., 2020).* Breastfed children are less likely to be overweight or obese, have lower IQ scores, and are less likely to develop diabetes in the future. Additionally, breastfed women are less likely to develop ovarian and breast cancers. The percentage of infants under six months who are exclusively breastfed is just 44%(Mundagowa et al., 2019). By the time the child is two years old, only 44% of mothers are still breastfeeding, compared to 68% who do so for at least a year.

Globally, exclusive breastfeeding (EBF) rates have shown improvement, with approximately 48% of infants under six months being exclusively breastfed as of 2023, near the World Health Assembly's 50% target by 2025 *(Nguyen et al., 2021)*. However, regional disparities persist, with Southeast Asia and the Western Pacific reporting higher rates (55.2%), while the Eastern Mediterranean lags at 34.5% *(Mihrshahi et al., 2010).* In high-income countries, EBF rates remain low; for instance, only 25% of U.S. infants and 28% of Chinese infants

were exclusively breastfed in 2015, while the United Kingdom recorded one of the lowest global rates, with just 0.5% of mothers still breastfeeding at one year. Though 70 out of 100 countries have reported EBF rate increases since 2017, challenges such as inadequate maternity support, cultural practices, and aggressive marketing of breast milk substitutes hinder progress (Olasinde et al., 2021).

Breastfeeding refers to feeding a baby with breast milk from the mother. Exclusive breastfeeding (EBF), as defined by the WHO, means that an infant receives only breast milk from their mother or a wet nurse during the first six months of life, without any additional solid or liquid foods or drinks, except for drops or syrups containing vitamins, minerals, supplements, or medications *(Machila et al., 2021; Jama et al., 2020).* This practice ensures optimal growth, development, and health for infants.

Breastfeeding plays a critical role in achieving several Sustainable Development Goal (SDGs), particularly those related to health, nutrition, and well-being. According to UNICEF and WHO, breastfeeding is not just a health intervention but a key component of global development efforts. It directly impacts SDG 2, which focuses on ending hunger and improving nutrition, and SDG 3, which aims to ensure healthy lives and promote well-being for all ages.

SDG 2's goal is to "end hunger, achieve food security and improved nutrition, and promote sustainable agriculture." Breastfeeding is directly linked to this goal as it is one of the most effective ways to ensure infants receive the essential nutrients, they need in their early stages of life. Breast milk is a natural, complete source of nutrition that provides infants with all the necessary nutrients for optimal growth and development during the first six months of life. It contains a perfect balance of proteins, fats, vitamins, and minerals essential for an infant’s health.

Exclusive breastfeeding (EBF) for the first six months, followed by continued breastfeeding along with appropriate complementary foods, has been proven to significantly reduce malnutrition in children under five. Malnutrition is one of the leading causes of child mortality globally, contributing to stunted growth, cognitive impairment, and weakened immunity. By promoting breastfeeding, societies can work toward achieving the goal of reducing hunger and malnutrition, particularly in low- and middle-income countries where access to nutritious food is limited.

Breastfeeding also helps prevent both undernutrition and obesity later in life. Research has shown that breastfed infants are less likely to become overweight or obese as they grow older, thus contributing to better long-term health outcomes and reducing the global burden of non-communicable diseases (NCDs) such as diabetes and cardiovascular diseases. These outcomes align with the broader goals of SDG 2, as they contribute to a healthier, more nourished global population. In 2012, the World Health Assembly passed the Comprehensive Implementation Plan on Maternal, Infant, and Young Child Nutrition (MIYCN), with one of the six WHO global nutrition targets aiming to increase the rate of exclusive breastfeeding among infants less than six months to at least 50% by the year 2025 *(Zong et al., 2021).* This objective was expanded to include a 2030 aim of 70% of newborns receiving only breast milk until they are six months old. If the 2030 target is achieved, the global rate of exclusive breastfeeding, which stood at 37% in 2005, will have almost doubled in 25 years (North et al., 2022). Studies show that high-income countries have shorter breastfeeding durations than low- and middle-income countries (LMICs). For instance, in the United States between 2009 and 2012, only about 24% of infants under the age of six months were exclusively breastfed. In 2020, despite a continuous rise in global breastfeeding rates, less than half (44%) of newborns received only breast milk for the first six months of their lives *(North et al., 2022).*

While global breastfeeding practices have improved over the past few decades, breastfeeding rates in LMICs still fall short of WHO feeding recommendations *(Zong et al., 2021).* Some regions have made faster progress than others. While exclusive breastfeeding rates in the Middle East and North Africa have remained relatively unchanged, Sub-Saharan Africa has seen consistent improvement (North et al., 2022). However, these rates still fall short of UNICEF's 100% recommendation. The low prevalence of EBF in the developing world, especially in West and Central Africa—regions with some of the highest rates of child malnutrition—is evidence of this. Only approximately 25% of infants in Africa were exclusively breastfed, and 6% of newborns in developing nations were never breastfed *(Jama et al., 2020).*

SDG 3 emphasizes ensuring healthy lives and promoting well-being for all ages. Breastfeeding is directly linked to better health outcomes for both infants and mothers, making it a cornerstone of SDG 3's objectives. The WHO estimates that increasing breastfeeding rates to near-universal levels could save more than 800,000 children's lives every year, primarily by preventing deaths due to diarrhea and pneumonia, two leading causes of child mortality. For infants, breastfeeding has numerous immediate and long-term health benefits. It strengthens the immune system, reduces the risk of infections, and lowers the likelihood of developing chronic conditions like asthma, allergies, and type 2 diabetes. Breastfed babies also tend to have better cognitive development, leading to improved academic performance later in life. These benefits align closely with SDG 3's target of reducing child mortality and improving the health and well-being of children globally.

For mothers, breastfeeding has been associated with a lower risk of breast and ovarian cancers, type 2 diabetes, and postpartum depression. It also promotes maternal bonding with the infant, contributing to both physical and emotional well-being. The health benefits for

mothers align with SDG 3's focus on reducing maternal mortality and improving maternal health. The three East African countries of Kenya, Tanzania, and Uganda have an average exclusive breastfeeding prevalence of 58.1% *(Machila et al., 2021).* In Somaliland, exclusive breastfeeding prevalence is much lower at 20.5%, falling short of the recommendations for infant and young child feeding (IYCF), which state that infants should be exclusively breastfed for the first six months of life.

Despite the well-documented benefits of exclusive breastfeeding, several barriers hinder its widespread practice. Misinformation and conflicting societal beliefs contribute to low adherence. Some misconceptions include the belief that nursing mothers cannot produce enough milk to sustain their babies for six months or that breastfeeding accelerates aging in women *(Jama et al., 2020).* In Kenya, many mothers opt for mixed feeding over exclusive breastfeeding due to inconsistent advice from health professionals, family, and community members *(Machila et al., 2021).*

Cultural and socioeconomic factors also influence breastfeeding practices. Barriers include peer or cultural pressure to introduce bottle feeding, maternal employment outside the home, economic status, maternal age and education, household workload, access to mass media, and healthcare services *(Jama et al., 2020).* To address these challenges, the Ministry of Health in Somalia, in collaboration with UNICEF, has been working to improve infant breastfeeding practices and dispel myths discouraging exclusive breastfeeding. However, scientific studies examining the frequency and influencing factors of exclusive breastfeeding in Somalia remain limited, highlighting the need for further research *(Jama et al., 2020).*

1.2 Problem statement

Exclusive breastfeeding for the first six months of life is crucial for infant survival, particularly in low- and middle-income countries. Infants who are not exclusively breastfed

are at a higher risk of mortality due to infections such as acute respiratory infections and diarrhea *(Kundu et al., 2024).* For instance, studies have shown that non-exclusively breastfed infants have a 2.23-fold higher risk of death from all causes, a 2.40-fold higher risk from acute respiratory infections, and a 3.94-fold higher risk from diarrhea compared to exclusively breastfed infants *(Kundu et al., 2024).* In the United States, research analyzing nearly 10 million births between 2016 and 2018 found that infants who were breastfed had a 33% lower risk of post-perinatal death (from day 7 to 364) compared to those who were not breastfed. This underscores the protective effect of breastfeeding against infant mortality *(Mitsunaga & Yamauchi, 2020).*

An estimated 804,000 newborn deaths worldwide in 2011 were attributed to inadequate breastfeeding practices, accounting for 11.6% of total under-five mortality (Machila et al., 2021). Research indicates that over two-thirds of the sixty percent of under-five deaths attributed to malnutrition (either directly or indirectly) are linked to inadequate breastfeeding practices throughout infancy (Arero, 2022). Global recommendations state that breastfeeding should begin as soon as possible after birth, be exclusive for up to six months, and continue until the child is two years old. In 2016, an estimated 101.1 million children in low- and middle-income countries did not receive this care *(North et al., 2022).*

Although evidence strongly supports the benefits of breastfeeding for women and children worldwide, the practice remains suboptimal in many regions. From 2002 to 2008, data from 46 low- and middle-income (LMIC) countries reported that only 37% of infants under six months were exclusively breastfed *(Zong et al., 2021).* In Somalia, studies indicate that the EBF rate, although improving, remains low, increasing from 5% to 34% in 2020. The persistently high under-five mortality rate in Somalia—estimated to be 91.3 per 1,000 live

births by 2030—is closely linked to this low EBF rate, which is projected to be 111.5 per 1,000 live births (Mahdi et al., 2021; DNS Government of Somalia, 2020).

Exclusive breastfeeding (EBF), which refers to feeding infants only breast milk for the first six months of life without any additional food or water, is widely recognized as the optimal source of nutrition for infants. Despite the well-documented benefits, such as improved immunity, reduced risk of infections, and enhanced cognitive development, achieving and maintaining exclusive breastfeeding remains a significant challenge worldwide. The problem stems from various socio-economic, cultural, and healthcare-related factors. Many mothers, particularly in low-income and developing countries, lack access to proper education and support regarding breastfeeding practices. Inadequate healthcare infrastructure and weak enforcement of maternity leave policies further hinder the ability of working mothers to exclusively breastfeed. Additionally, the aggressive marketing of breast milk substitutes often undermines efforts to promote EBF, particularly in settings where formula feeding is perceived as more modern or convenient.

Exclusive breastfeeding (EBF) rates in Somalia have shown some improvement over the years but remain below global targets. In 2009, only 5.3% of infants under six months were exclusively breastfed (Miikkulainen et al., 2023). By 2020, this rate had increased to approximately 34%, according to the Somali Demographic Health Survey. Despite this progress, the current EBF rate is still significantly lower than the World Health Organization's global target of 50% by 2025 *(Miikkulainen et al., 2023).*

Cultural beliefs and practices also play a crucial role. In some societies, the early introduction of water, herbal mixtures, or solid foods is common, contributing to the low rates of EBF. Furthermore, many mothers experience physical difficulties such as lactation problems or

fear of insufficient milk production, leading to early cessation of breastfeeding. These issues highlight the need for comprehensive public health interventions, robust support systems, and policy reforms to promote and sustain exclusive breastfeeding globally. This study sought to determine the prevalence, knowledge, and determinants of exclusive breastfeeding among mothers with children aged 0-6 months in Wadajir District, Banadir Region, Somalia. The findings served as baseline data to guide policy-making efforts aimed at reducing infant mortality resulting from insufficient EBF practices.

1.3 Study rationale

According to a prior study, nearly 100% compliance with key breastfeeding recommendations could prevent approximately 820,000 child deaths, and 200 maternal deaths, and save $300 billion annually *(Wanjohi et al., 2017; North et al., 2022).* Strategies to improve exclusive breastfeeding (EBF) trends must be guided by an understanding of the local factors influencing EBF *(Zewdie et al., 2022)*. Encouraging exclusive breastfeeding is the most cost-effective strategy for reducing infant mortality in developing nations (Ahmed et al., 2024) . However, in most Asian and African countries, exclusive breastfeeding rates remain below 50%. Understanding the factors that motivate mothers to practice exclusive breastfeeding is essential for developing effective strategies to increase EBF adoption across Africa and Asia (Intiful et al., 2020).

Breastfeeding is a vital strategy for achieving many of the Sustainable Development Goals (SDGs), particularly those related to nutrition, health, and well-being. It provides significant benefits for both infants and mothers, contributing to healthier populations and reducing the burden of malnutrition and disease. By promoting breastfeeding on a global scale, societies can make substantial progress toward ending hunger, improving nutrition, and ensuring

healthy lives for all. Supporting breastfeeding is not only crucial for individual health but also plays a key role in broader societal and environmental sustainability.

Breastfeeding is cost-effective and offers substantial economic benefits to families and communities. In Somalia, where many families live in poverty, the cost savings associated with breastfeeding can be significant. Breast milk is free and readily available, eliminating the need for expensive formula and feeding supplies. Additionally, breastfeeding reduces healthcare costs by lowering the incidence of illnesses that require medical treatment. Promoting EBF can, therefore, contribute to economic stability and improve the well-being of families in Somalia.

Exclusive breastfeeding also provides numerous health benefits for mothers. It promotes postpartum recovery, reduces the risk of postpartum hemorrhage, and helps with birth spacing by delaying the return of fertility. Additionally, breastfeeding has been associated with a lower risk of breast and ovarian cancers, type 2 diabetes, and cardiovascular diseases. By supporting EBF, we can improve maternal health outcomes and enhance the overall well-being of women in the country.

1.4 Objectives of the study

1.4.1 General Objective

The general objective of this study was to assess the determinants of exclusive breastfeeding among mothers with infants below six months in Wadajir district, Banadir region- Somalia.

1.4.2 Specific objectives

1. To determine the prevalence of EBF among mothers of infants under six months of age in Wadajir District Bandir region, Somalia.

2. To assess the influence of knowledge of EBF on exclusive breastfeeding among mothers of infants under six months of age in Wadajir district, Banadir region- Somalia.
3. To assess the influence of EBF practices on exclusive breastfeeding among mothers of infants under six months of age in Wadajir district, Banadir region- Somalia

1.5 Research questions

1. What is the prevalence of EBF among mothers of infants under six months of age in Wadajir District Bandir region, Somalia?
2. What is the influence of knowledge of EBF on exclusive breastfeeding among mothers of infants under six months of age in Wadajir district, Banadir region- Somalia?
3. What is the influence of EBF practices on exclusive breastfeeding among mothers of infants under six months of age in Wadajir district, Banadir region- Somalia?

1.6 Scope of the study

Breastfeeding is the most effective method of infant feeding during the first six months of a baby's life. This study aims to determine the prevalence and factors associated with exclusive breastfeeding among infants under six months in Wadajir District, Banadir Region, Somalia. Wadajir District is served by a mother-to-child health government center, which provides healthcare services to a population of 191,828 people *(Damey, 2020).* The study was guided by the ecological model, which comprises five levels of influence corresponding to the dependent variables. Participants will be recruited using a systematic sampling method. The study period was from August to September 2023, conducted from Sunday to Thursday, excluding public holidays. Breastfeeding mothers with infants under six months old in Wadajir District, Banadir Region, Somalia, were assessed. Addressing these barriers can

significantly contribute to improving global child health outcomes and achieving the Sustainable Development Goals (SDGs), particularly those related to health, nutrition, and well-being.

1.7 Justification of the study

The United Nations Decade of Action on Nutrition (2016–2025) identified seven possible action-network areas, with optimal breastfeeding and supplemental feeding comprising the fifth action area. In 2017, the World Bank developed a nutrition investment framework to achieve global targets for reducing stunting, anemia, inadequate breastfeeding, and wasting by 2025. Despite efforts to curb the promotion of breast milk substitutes, breastfeeding protection regulations remain insufficient in most countries. To meet the global breastfeeding target by 2025, low- and middle-income countries (LMICs) must sustain and strengthen their efforts. For the United Nations Decade of Action on Nutrition (2016–2025), data on current breastfeeding prevalence and trends will be valuable for mid-term evaluation, continued funding, and strategic action *(Zong et al., 2021).* Given the significant benefits for both mothers and children—as well as the broader public health impact—greater advocacy and intervention efforts are necessary to increase breastfeeding rates globally, ensuring the health of present and future generations. Achieving the 2030 targets will require accelerated progress in nearly all regions *(North et al., 2022).*

Given the critical role of breastfeeding in achieving the Sustainable Development Goals (SDGs), it is essential to implement and support policies that promote and protect breastfeeding practices worldwide. The International Code of Marketing of Breast-milk Substitutes, adopted by the World Health Assembly, is a key policy tool designed to regulate formula marketing and prevent commercial interests from undermining breastfeeding.

Exclusive breastfeeding is a crucial intervention for improving infant and maternal health in Somalia. Despite its well-documented benefits, the practice remains suboptimal due to various cultural, social, and economic factors. This study aims to explore the factors influencing exclusive breastfeeding practices in Somalia and to develop strategies for promoting and sustaining this essential practice. By addressing the barriers to exclusive breastfeeding and enhancing support systems, we can improve child survival rates, reduce malnutrition, and contribute to the overall well-being of families in Somalia.

1.8 Significance of the study

This study on the Prevalence and Determinants of Exclusive Breastfeeding Among Mothers with Infants Aged Under Six Months in Wadajir District, Banadir Region, Somalia is significant as it provides crucial insights into breastfeeding practices, maternal knowledge, and the socioeconomic and cultural factors influencing exclusive breastfeeding (EBF). Given that EBF is a proven intervention for reducing infant morbidity and mortality, understanding its prevalence and barriers will help develop targeted strategies to improve child survival and maternal health. The findings will support evidence-based policy formulation, guiding healthcare providers, policymakers, and stakeholders in designing effective interventions to promote breastfeeding. Additionally, this study aligns with global health goals, particularly the Sustainable Development Goals (SDGs), by addressing malnutrition, enhancing early childhood development, and improving overall well-being. It will also help uncover cultural and economic barriers that hinder EBF, enabling the creation of community-specific awareness and support programs. Moreover, the research will contribute to strengthening maternal education, public health interventions, and breastfeeding promotion efforts in Somalia, providing essential baseline data for assessing progress and informing future studies. Ultimately, this study will play a critical role in improving maternal and child health

outcomes, reducing infant mortality, and fostering sustainable public health improvements in the region.

1.9 Assumptions of the study

This study assumed that mothers' knowledge and awareness of exclusive breastfeeding (EBF) significantly influenced their breastfeeding practices. Socio-cultural factors, including traditional beliefs and societal norms, were expected to play a role in shaping mothers' decisions regarding EBF. Access to healthcare services, maternal counseling, and breastfeeding support from healthcare professionals was presumed to have positively impacted EBF rates. Economic and employment conditions were assumed to have affected mothers' ability to practice EBF, particularly among working mothers who lacked adequate maternity leave or workplace breastfeeding support. The study also assumed that family members, especially grandmothers and spouses, influenced mothers' breastfeeding choices. Furthermore, it was expected that infants who received exclusive breastfeeding for the first six months experienced better health outcomes, such as reduced risks of infections and malnutrition. Additionally, the study assumed that mothers faced various challenges, including perceived insufficient milk supply, lack of support, and misinformation, which hindered EBF practices. Lastly, it was presumed that strengthening breastfeeding policies, awareness campaigns, and community-based interventions would have led to improved EBF rates in the study area. These assumptions guided the study in assessing the key determinants of EBF and formulating recommendations to enhance breastfeeding practices in Wadajir District.

1.10 Limitations of the Study

First, the study relied on self-reported data from mothers, which may have been subject to recall bias or social desirability bias, as some respondents might have provided answers, they

deemed socially acceptable rather than their actual practices. Second, the study was conducted in a single district, limiting the generalizability of the findings to other regions of Somalia with different socio-economic and cultural dynamics. Third, the cross-sectional design of the study restricted the ability to establish causal relationships between exclusive breastfeeding and its determinants, as it only provided a snapshot of the situation at a specific point in time. Additionally, factors such as seasonal variations and food security, which may influence breastfeeding practices, were not accounted for in the study. The study also faced challenges related to cultural sensitivities, as discussing breastfeeding practices in some communities might have been considered a private or taboo subject, potentially leading to underreporting. Furthermore, logistical constraints, such as limited access to certain areas due to security concerns, may have restricted the scope of data collection. Lastly, the study may not have fully captured all potential determinants of exclusive breastfeeding, as some socio-economic and psychological factors influencing maternal decisions were difficult to quantify. Despite these limitations, the study provided valuable insights into the prevalence and determinants of exclusive breastfeeding in the study area, offering a foundation for future research and policy interventions.

1.11 Delimitations of the study

The study was confined to the Wadajir District, limiting its findings to this geographical area and not extending them to other regions of Somalia. It specifically targeted mothers with infants under six months old, thereby excluding mothers with older children or pregnant women. The study only examined factors directly influencing exclusive breastfeeding, such as maternal knowledge and practices, without delving into broader public health policies or environmental factors. Additionally, the study employed a cross-sectional design, meaning

it assessed breastfeeding practices at a single point in time rather than tracking changes over an extended period. The data collection was conducted using structured questionnaires and interviews, ensuring a standardized approach but limiting the depth of qualitative insights. By setting these boundaries, the study maintained a clear focus on its research objectives while acknowledging that other factors beyond its scope could also influence exclusive breastfeeding practices in Somalia.

1.12 Operational definition of terms

Breastfeeding Practices	The methods and patterns through which mothers provide breast milk to their infants, including exclusive, predominant, or partial breastfeeding.
Determinants of Exclusive Breastfeeding	The various socio-economic, cultural, maternal, and healthcare-related factors that influence a mother's ability and decision to practice exclusive breastfeeding.
Exclusive Breastfeeding (EBF)	The practice of feeding an infant only breast milk, without any additional food, water, or other liquids, except for medically prescribed vitamins, minerals, or medications, for the first six months of life.
Infant	A child aged under six months is the focus of breastfeeding practices examined in this study.
Infant and Young Child Feeding (IYCF) Practices:	A set of recommendations by WHO and UNICEF that guide optimal feeding of infants and young children to ensure their health and survival.
Maternal Education Level	The highest level of education attained by the mother can influence her knowledge and decision-making regarding exclusive breastfeeding.
Mixed Feeding	The practice of feeding an infant with both breast milk and other liquids or solid foods before the recommended six-month period can undermine exclusive breastfeeding.
Prevalence of Exclusive Breastfeeding	The proportion of infants under six months old who were exclusively breastfed at the time of the study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

An infant should be fed only breast milk for the first six months of life, according to the World Health Organization (WHO), the American Academy of Pediatrics (AAP), and UNICEF. After six months, breast milk should be supplemented with additional feeds and meals. Breastfeeding should begin within the first hour after delivery (Behzadifar et al., 2019). Exclusive breastfeeding (EBF) is widely recognized as one of the most effective interventions for improving child survival and health, particularly in low-income and fragile contexts such as Somalia. Breastfeeding provides infants with essential nutrients, protects them from common childhood illnesses, and contributes to cognitive development. The WHO and UNICEF recommend exclusive breastfeeding for the first six months of life, followed by continued breastfeeding alongside appropriate complementary foods. Despite these recommendations, EBF rates in Somalia remain relatively low due to various socio-cultural, economic, and structural barriers. This literature review examines the state of EBF in the Wadajir district of the Banadir region, Somalia, focusing on its benefits, barriers, and interventions aimed at promoting the practice.

2.1 Benefits of Exclusive Breastfeeding

Exclusive breastfeeding (EBF) plays a critical role in reducing infant mortality, particularly in countries like Somalia, where malnutrition and infectious diseases are prevalent. Studies indicate that breastfed infants have a lower risk of dying from common childhood illnesses such as diarrhea, pneumonia, and malnutrition-related diseases, which are significant contributors to infant mortality in Somalia *(Mohamed et al., 2020)*. According to the 2020

Somalia Demographic and Health Survey (SDHS), malnutrition remains a severe public health concern in the country, with high levels of stunting, wasting, and underweight among children under five. EBF helps mitigate the effects of malnutrition by providing infants with all the essential nutrients they need for the first six months. Additionally, breast milk contains antibodies that strengthen the infant's immune system, reducing the risk of infectious diseases, which are widespread in Somalia due to inadequate sanitation and healthcare infrastructure.

The Somali government, along with international organizations, has recognized the importance of breastfeeding and implemented policies and programs to support it. The Somalia Nutrition Strategy (2020-2025) emphasizes the promotion of EBF as a key intervention to improve child nutrition and health. However, challenges such as limited healthcare infrastructure, a shortage of trained healthcare providers, and inadequate community support hinder the effective implementation of these policies. This study assessed current policies and programs related to breastfeeding in Somalia and provided recommendations for strengthening support systems and enhancing the implementation of EBF initiatives.

2.2 Prevalence of Exclusive Breastfeeding

Globally, the World Health Organization revealed a 36% overall prevalence of EBF, with East Asia/Pacific having the highest rates (43%) and West/Central Africa having the lowest (20%) (UNICEF, 2018). Exclusive breastfeeding is a critical public health intervention for infant survival, but its prevalence varies worldwide *(Chakona, 2020)*. The World Health Organization (WHO) and UNICEF recommend that infants be exclusively breastfed for the first six months of life. According to the UNICEF Global Breastfeeding Scorecard 2021,

approximately 47.7% of infants aged 0–5 months were exclusively breastfed globally *(Victora et al., 2016)*. This marks an improvement from the 37% reported in 2012, but it still falls short of the WHO's 2025 Global Nutrition Target of achieving at least 50% EBF prevalence(Dukuzumuremyi et al., 2020). Africa has a relatively lower EBF prevalence compared to global figures, with significant regional disparities. According to a report by the Food and Agriculture Organization (FAO) in 2023, the overall EBF prevalence in Africa was 44.3%, slightly below the global average (FAO, 2023). Somalia has one of the lowest EBF rates in East Africa due to ongoing humanitarian crises, food insecurity, and inadequate healthcare services. According to the 2019 Somalia Demographic and Health Survey (SDHS), the EBF rate in Somalia was estimated at 9.0% *(SDHS, 2019)*. However, a 2021 UNICEF report indicated a significant increase to 34%, showing a positive trend in breastfeeding practices *(Sarfo et al., 2024)*.

Table 1. Prevalence of exclusive breastfeeding

Author (Year)	**Study Design**	Country	Prevalence of EBF for 0- 6 months	Source
(Bhanderi et al., 2019)	community-based cross-sectional survey	Gujarat, India	49.7%	Bhanderi, D. J., Pandya, Y. P., & Sharma, D. B. (2019). Prevalence of exclusive breastfeeding and factors influencing it in Gujarat. Journal of Family Medicine and Primary Care, 8(7), 2204-2209.
(Ratnayake & Rowel, 2018)	A clinic-based cross-sectional learning	Kandy district, Sri Lanka	50.8%	Ratnayake, H. E., & Rowel, D. (2018). Prevalence of exclusive breastfeeding and barriers among mothers in Sri Lanka. BMC Public Health, 18(1), 130-136.
(Behzadifar et al., 2019)	methodical review and	Iran	53%	Behzadifar, M., Saki, M., Behzadifar, M., Bragazzi, N. L., Khani, P., Alipour, V.,

	meta-analysis			Armoon, B., & Salemi, M. (2019). Prevalence of exclusive breastfeeding practice in the first six months of life and its determinants in Iran:
(Khasawneh & Khasawneh, 2017)	cross-sectional survey	Jordan	33%	Khasawneh, W., & Khasawneh, A. (2017). The prevalence of exclusive breastfeeding and associated factors in Jordan.
(Agho et al., 2019)	Multivariate evaluations	Commercial Community of West African States	13% in Côte d'Ivoire to 58% in Togo	Agho, K. E., Dibley, M. J., Odiase, J. I., & Ogbonmwan, S. M. (2019). Determinants of exclusive breastfeeding in West Africa: A multivariate analysis.
(Setegn et al., 2012)	community-based cross-sectional survey	Goba, Ethiopia	71.3%	Setegn, T., Gerbaba, M., & Belachew, T. (2012). Determinants of exclusive breastfeeding practices in Ethiopia. International Breastfeeding Journal, 7(1), 17-25.
(Asemahagn, 2016)	community-based cross-sectional survey	Azezo district, Ethiopia	79%	Asemahagn, M. A. (2016). Determinants of exclusive breastfeeding practices in Azezo district, Ethiopia.
(Sonko & Worku, 2015)	community-based cross-sectional survey	Halaba special woreda. Ethiopia	70.5%	Sonko, A., & Worku, A. (2015). Prevalence and determinants of exclusive breastfeeding practices in Halaba special woreda, Ethiopia.
(Hagos & Tadesse, 2020)	cross-sectional study	Tigray regions, Ethiopia	88%	Hagos, G., & Tadesse, A. (2020). High prevalence of exclusive breastfeeding in Tigray regions, Ethiopia.
(Egata, 2014)	Hospital-based cross-sectional study	Jimma Town, Ethiopia	67.2%	Egata, A. (2014). Exclusive breastfeeding practices among mothers in Jimma Town, Ethiopia.
(Awoke & Mulatu, 2021)	communal-based cross-sectional study	Sheka Zone, Ethiopia	76%	Awoke, T., & Mulatu, B. (2021). Factors influencing exclusive breastfeeding in Sheka Zone, Ethiopia.

(Dede & Bras, 2020)	A cross-sectional analysis	Tanzania	59%	Dede, A. K., & Bras, P. G. (2020). Determinants of exclusive breastfeeding in Tanzania.
(Ali, 2012)	cross section hospital-based study	Unguja Island, Zanzibar	48.3%.	Ali, A. (2012). Hospital-based study on exclusive breastfeeding in Zanzibar.
(Nabunya et al., 2020)	community-based cross-sectional survey	Kampala, Uganda	42.8%	Nabunya, M. R., Kagwire, M., & Wamala, D. S. (2020). Exclusive breastfeeding practices in Uganda: A community-based cross-sectional survey.
(Mahdi et al., 2021)	Descriptive cross-sectional survey	Mogadishu, Somalia	29.7%	Mahdi, A. I., Ismail, H. A., & Abdi, A. M. (2021). Exclusive breastfeeding practices and barriers in Mogadishu, Somalia.
(Jama et al., 2020)	community-based cross-sectional study	Somaliland	20.47%	Jama, S., Mohamud, F., & Omar, A. (2020). Prevalence of exclusive breastfeeding in Somaliland:
(DNS Government of Somalia, 2020)	Survey	Somalia	33.7%	DNS Government of Somalia. (2020). Somalia nutrition and health survey: Prevalence of exclusive breastfeeding.

EBF is generally prevalent in Sub-Saharan Africa, wherever there are high rates of mother-to-child HIV transmission, famine and drought, malnourishment, and infant and child mortality rates, at 33%. *(Mgongo et al., 2013).*

2.3. Knowledge on exclusive breastfeeding

Exclusive breastfeeding (EBF) is defined as feeding an infant only breast milk, with no additional food or drink, not even water, except for oral rehydration solutions, drops, or syrups (WHO, 2020). The World Health Organization (WHO) and the United Nations International Children's Emergency Fund (UNICEF) recommend EBF for the first six

months of life, followed by continued breastfeeding with appropriate complementary foods up to two years or beyond (WHO, 2017). Maternal knowledge about EBF plays a crucial role in its successful practice and has significant implications for infant health, maternal well-being, and overall public health outcomes.

Maternal knowledge about EBF encompasses understanding its benefits, recommended duration, proper breastfeeding techniques, and the risks of mixed feeding or early cessation. Studies indicate that maternal awareness and education about EBF directly influence breastfeeding initiation, exclusivity, and duration *(Victora et al., 2016).* Knowledgeable mothers are more likely to adhere to EBF recommendations, ensuring better nutrition and immunity for their infants *(Rollins et al., 2016).* Moreover, high maternal knowledge levels have been associated with improved breastfeeding self-efficacy and confidence in managing breastfeeding challenges *(Dennis, 2019).* Globally, maternal knowledge about EBF varies widely. A systematic review by *Ogbo et al. (2019)* found that while knowledge about breastfeeding is generally high, gaps remain in specific aspects such as breastfeeding duration, benefits, and management of breastfeeding difficulties. High-income countries tend to have better maternal awareness due to access to healthcare services, breastfeeding education programs, and media campaigns. However, low- and middle-income countries (LMICs) often exhibit disparities in maternal knowledge due to socio-cultural barriers, limited healthcare access, and inadequate maternal education *(Neves et al., 2021).*

In Africa, knowledge about EBF is often inconsistent, with variations between urban and rural populations. Studies from Nigeria, Ghana, and Ethiopia highlight that while a majority of mothers have heard about EBF, misconceptions about colostrum, perceived milk insufficiency, and cultural feeding practices hinder its practice *(Tewabe et al., 2017*; Adugna,

2014). Community-based interventions, including maternal education programs, have been effective in improving breastfeeding knowledge and practices in African settings (Kimani-Murage et al., 2018). However, traditional beliefs and family influences still pose significant barriers to knowledge acquisition and application.

In Sub-Saharan Africa, maternal knowledge levels remain suboptimal, contributing to low EBF rates. A study by Issaka et al. (2020) found that only 37% of mothers in the region had comprehensive knowledge of EBF. Socioeconomic status, education level, and exposure to health information significantly influence maternal awareness. Additionally, traditional feeding practices and the misconception that breast milk alone is insufficient for infant growth contribute to early complementary feeding *(Mukuria et al., 2016).*

Studies in East Africa indicate that maternal education plays a significant role in increasing knowledge and adherence to EBF. In Kenya, a study by Wanjohi et al. (2017) revealed that mothers with higher educational levels were more knowledgeable about EBF benefits and its recommended duration. In Uganda, interventions targeting maternal knowledge through community health workers and antenatal counseling improved EBF rates from 40% to 60% *(Nankunda et al., 2010).* Nonetheless, socio-cultural barriers, including pressure from grandmothers and misconceptions about breast milk insufficiency, continue to hinder knowledge translation into practice.

In Somalia, knowledge about EBF is often limited due to factors such as low maternal literacy, inadequate antenatal education, and cultural beliefs. A study by Warsame et al. (2020) found that only 45% of Somali mothers had adequate knowledge of EBF recommendations. Many mothers believed that colostrum was harmful and discarded it, while others introduced water or animal milk early due to the misconception that breast milk alone was insufficient. Additionally, nomadic lifestyles and conflict-related disruptions in

healthcare services further contribute to gaps in maternal knowledge (Warsame et al., 2020; UNICEF, 2021). Efforts to improve maternal knowledge in Somalia have focused on training healthcare workers, integrating breastfeeding education into antenatal care, and community-based awareness campaigns.

Furthermore, research carried out in Tanzania revealed that over 91% of moms got prenatal care. But only 39% of expectant moms and 25% of new mothers said they had received breastfeeding advice, and many women believed that mothers' breast milk was insufficient for a child's development *(Jahanpour et al., 2022).* According to *Makwela et al. (2024),* one of the key reasons for early mixed feeding was the moms' perception that the kids was thirsty and that they needed to add herbal medication for cultural reasons. According to the WHO Global Secondary Study, cultural views, educational attainment, and healthcare access are among the obstacles to breastfeeding in low-income nations *(Mekebo et al., 2022*). In the nursing process, mothers' optimistic outlook and thorough understanding are crucial. More formula feeding knowledge (OR 1.09; 95% CI 1.04–1.14), attitude (OR 1.04; 95% CI 1.00, 1.09), and practice control (OR 1.11; 95% CI 1.02, 1.20) were linked to a higher prevalence of exclusive breastfeeding, according to a prior study that found mothers who knew more about EBF were 5.9 times more most likely to practice EBF than their counterparts (OR 5.9; 95% CI 2.6, 13.3; $p < 0.001$) *(Syahri et al., 2024).*

The results of 15 research that looked at East African women' knowledge, attitudes, and practices about exclusive breastfeeding were combined in this study. The majority of women' best knowledge responses for exclusive breastfeeding fall between 40.1 and 97.6%. Although some significant gaps were identified, the mothers' understanding of EBF was typically fair. A knowledge score of less than 70% indicates that nutrition intervention is urgent, in accordance with the Food and Agriculture Organization's (FAO) requirements. According to

Ahmed et al. (2024), moms who scored higher than 70% on the knowledge exam were deemed to have a high level of knowledge, while those who scored lower than 70% were deemed to have a poor level of knowledge.

According to the study's findings, moms who are well-informed on the value of exclusive breastfeeding are aware that, during the first six months of a baby's life, only breast milk is nutritionally significant, and that the kid should be breastfed within an hour of delivery. This outcome was consistent with earlier research from Ethiopia and Ghana *(Abbafati et al., 2020; Asmare & Agmas, 2023).* In comparison to studies carried out in Nigeria, the findings of this study show that, in addition to gaps in mothers' knowledge of EBF, the majority of mothers also lacked sufficient knowledge about the duration of feeding, colostrum, breastfeeding on-demand, the advantages for both mothers and babies, and the risks associated with bottle-feeding *(Miassi et al., 2022).* In order to address these maternal knowledge gaps, health professionals, legislators, and health educators should intentionally try to explain the advantages of breast milk, breastfeeding on-demand, and colostrum initiation as soon as possible after delivery.

Their study's findings showed that over half of the moms (55.8%) had some EBF training, and that hospitals are the primary source of information regarding EBF (67.0%). This indicates that the mothers' prenatal treatment in hospitals is mostly responsible for their strong understanding of EBF. According to a previous poll, 51.6% of respondents said doctors taught them the majority of what they know about nursing *(Mruts et al., 2022).* In order to enhance mothers' attitudes and comprehension of nursing habits, it is imperative to provide prenatal, early postpartum, and continuing breastfeeding counseling. According to the results of the earlier multivariate analysis, being advised to breastfeed upon hospital discharge was the factor most strongly linked to the practice of EBF *(Lokossou et al., 2021).*

These results highlight the importance of women receiving correct information and highlight the vital role that healthcare providers play in encouraging breastfeeding-appropriate behaviors. Other prior research has confirmed the critical significance and influence of precise breastfeeding advice given by medical experts *(Zewdie et al., 2022).*

According to their research, mothers in the Kaduna metropolitan had a high degree of awareness and understanding of EBF practice *(Sridhar et al., 2020).* The fact that most women had access to the media, that more than 92% of them gave birth in a hospital, and that they were well-informed on the health advantages of EBF during the prenatal and postoperative clinics may be the cause of this. The results of this study clearly demonstrate this, since 78% of the participants learned about EBF from prenatal clinics. Additionally, 83% of them made the independent decision to use EBF *(Sridhar et al., 2020).*

2.4 Exclusive Breastfeeding Practices

Their study's results demonstrate how moms behave when it comes to exclusive nursing *(Ng'eno et al., 2020).* "Poverty, livelihood and living circumstances; early and single motherhood; poor social and competent support; commercial sexual work, inadequate understanding, myths and misconceptions; HIV and unintended pregnancies, the perception that mothers' milk production is insufficient for child's growth, child being thirsty, and the need to introduce medicinal plants for cultural reasons" are some of the factors that have been identified in East African studies as influencing the implementation of the WHO breast-feeding recommendations *(Bougma et al., 2023).* The survey's findings showed that while the majority of mothers have breastfed their children, only 55.9% of them have done so exclusively for the first six months, despite the fact that most mothers are aware of EBF and believe it is crucial for both the mother's and the child's health *(Ng'eno et al., 2020).* In comparison to research done in wealthy nations such as Brazil (19%), China (6.2%), and

Italy (33.3%), their study's findings were greater *(Black et al., 2020; Nguyen et al., 2022; Sarabi & Nosratabadi, 2022).*

The WHO's suggested EBF of 90% was higher than the WHA's worldwide aim of 50%. In line with research done in Nepal that found 83.3% of children were administered colostrum, the majority of moms (79.5.0%) had received it *(Hossain & Mihrshahi, 2024).* The majority of women, 72.9%, had started nursing within an hour of giving birth; this finding did not align with WHO guidelines, and it was greatest in the WHO Global Survey secondary analysis, where 57.6% of mothers had started breastfeeding within an hour of giving birth. Our study's prevalence was lower than that of other studies that were carried out in India (95%), and China (93.6%) *(Gong et al., 2022; Katoch, 2022).* According to this principle, state policies that guarantee women's living and working situations are suitable with exclusive breastfeeding are required, and healthcare practitioners who offer care for mothers should step up their efforts to promote EBF. Good feeding practices are crucial for mothers as well as for the health and nutritional quality of their children, since these factors have a negative impact on the children's mental and physical development. Prolactin, which promotes milk production, and oxytocin, which is responsible for milk ejection, are released in response to early nursing. It also lessens postpartum bleeding and encourages the uterus to contract after delivery.

In terms of where they found information on EBF, 67.8% of moms said that medical facilities and the media were their primary sources (13.1%) *(Gayesa et al., 2023).* Although our results were not as good as those of research done in Nigeria, which involved 42.5% of health workers, there is a need to encourage health professionals to perform more exclusive breastfeeding teaching *(Sokan-Adeaga et al., 2022).* According to earlier research, healthcare workers' motivation was a better indicator of knowledge growth, attitudes, and breastfeeding-

friendly practices. It also showed that mothers require support and encouragement from the health system as well as from their families and communities in order to successfully initiate and continue breastfeeding *(Bougma et al., 2023).*

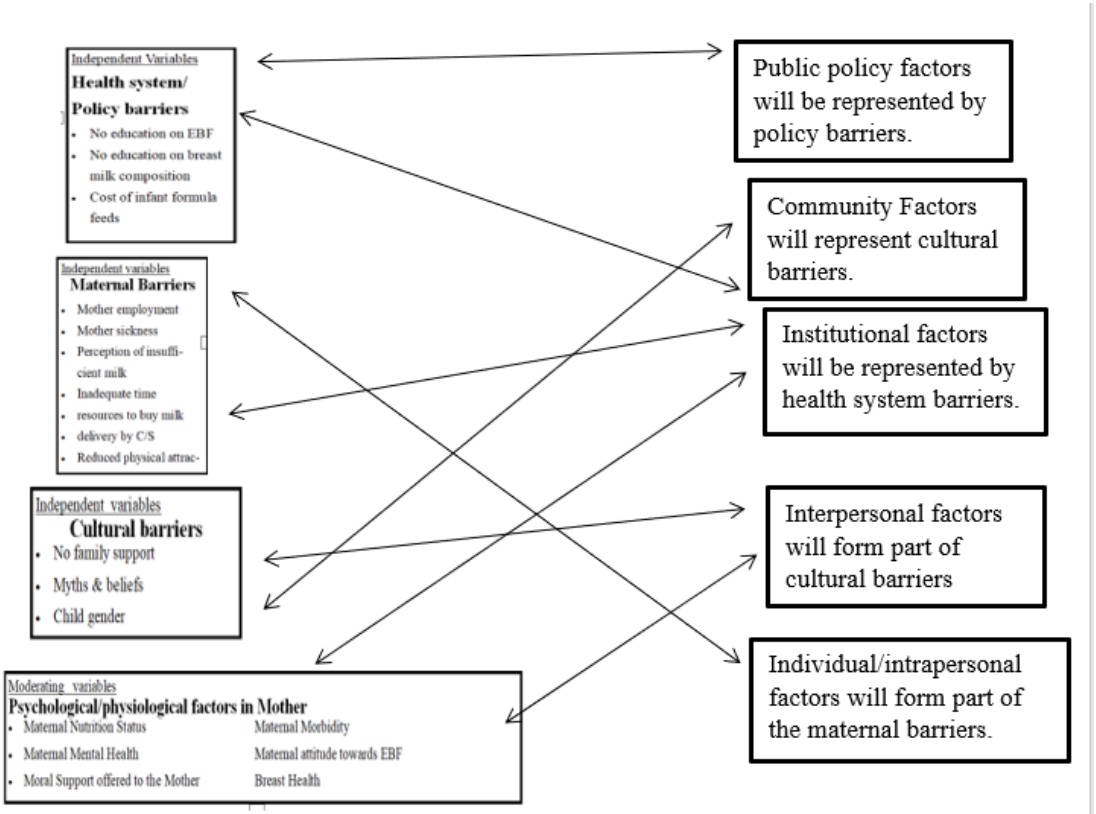
EBF practices in Nigeria were still below the 90% coverage rate for babies during the first six months of life that WHO/UNICEF advises for developing nations, according to another study conducted in Nigeria *(Sokan-Adeaga et al., 2022).* Even sub-Saharan African countries have higher rates than Nigeria *(Sokan-Adeaga et al., 2022).* The fact that northern Nigeria, especially Jigawa State, has a far reduced chance of exclusively nursing newborns is quite concerning *(Sokan-Adeaga et al., 2022).* This discovery has consequences, particularly for northern Nigerian rural communities where there is a high prevalence of undernutrition among children and a significant risk of diarrheal illness due to polluted water and poor environmental nutrition *(Bougma et al., 2023).* The majority of the moms in the research (83%) stated that they chose to breastfeed on their own, while the remaining mothers (17%) claimed that their husband, mother or mother-in-law, sisters, friends, and other people had an effect. 34.3% made a decision after delivery, whereas 65.7% made a decision before *(Sridhar et al., 2020).* According to Sridhar et al. (2020), around 85.2% of the participants acknowledged that they only provided their infants breast milk right after delivery, while others gave them water and herbs. Of them, 1.3% donated herbs and 12.6% offered water. Only 16.2% of mothers acknowledged giving their infants anything other than breast milk before six months of age, despite the fact that 87.8% of moms practiced colostrum feeding. When the infant requested it, the majority of the moms (83.9%) would breastfeed. According to Sridhar et al. (2020), a significant proportion of the moms (70%) were exclusively nursing.

2.5Theoretical Framework.

The study utilized Ecological models which have five levels of influence (CDC, 2015):

1. Individual/intrapersonal factors will form part of the maternal barriers as an independent variable.
2. Interpersonal factors will form part of cultural barriers as independent variable.
3. Institutional factors will be represented by health system barriers as independent variable.
4. Community Factors will represent cultural barriers which is an independent variable.
5. Public policy factors will be represented by policy barriers which is an independent

Figure 1. Varience (Own built from the CF)



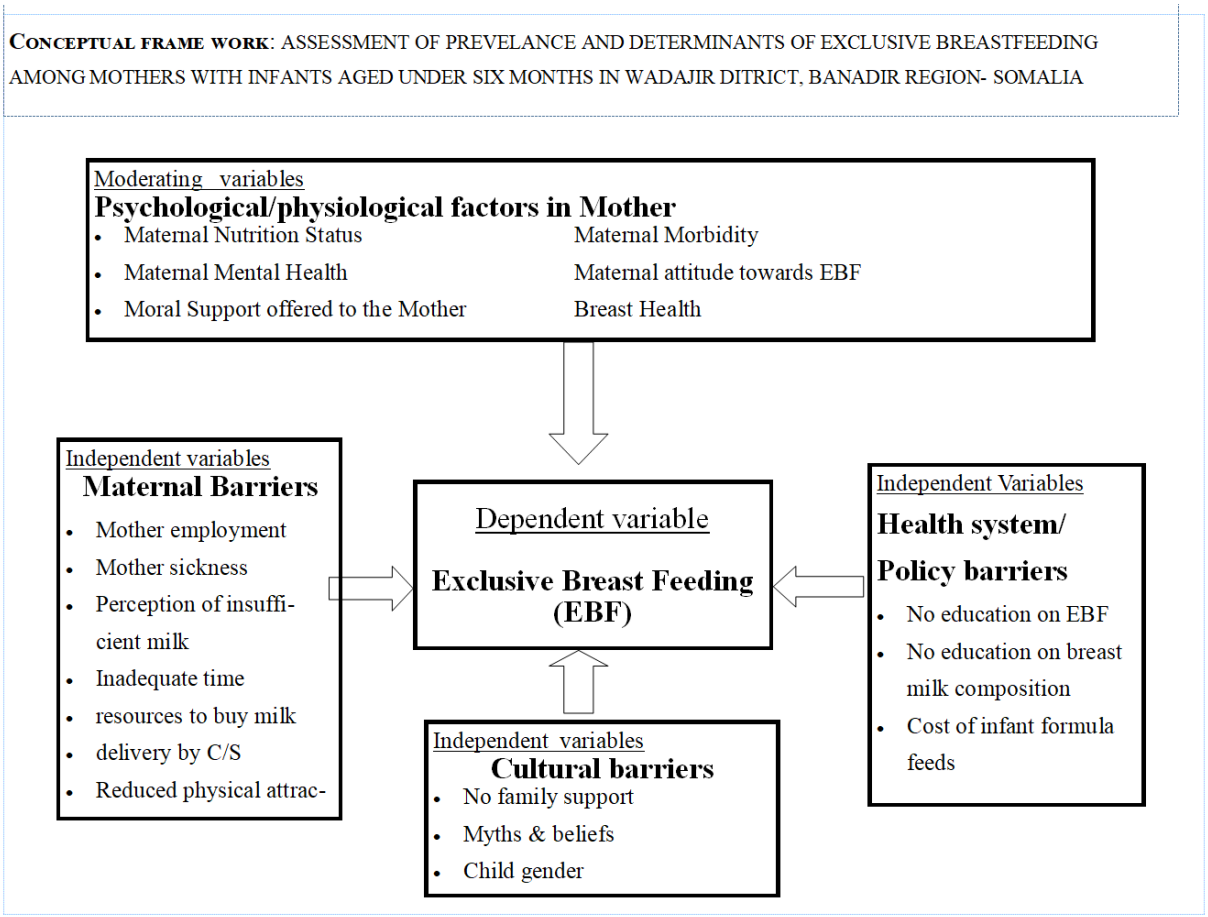


Figure 2. Conceptual frameworks (Own work)

2.6 Literature Review Summary

Understanding the knowledge and practice of exclusive breastfeeding (EBF), along with its prevalence and associated factors, is crucial in supporting effective strategies to raise public awareness of its benefits. This knowledge will also provide the government with targeted methods to enhance and sustain EBF best practices, ultimately improving child health and reducing morbidity and mortality rates.

Extensive research has highlighted the significant health benefits of EBF for both mothers and infants. However, achieving the breastfeeding targets set by the World Health Organization remains a challenge. Identified barriers to EBF can be categorized into cultural, health institutional, policy, and maternal barriers. To comprehensively examine these factors,

the study will be guided by the ecological model, which considers the complex interactions between individual, community, and systemic influences on breastfeeding practices.

Exclusive breastfeeding (EBF) is essential for child survival and development, particularly in Somalia, where malnutrition and infectious diseases are prevalent. EBF provides infants with all the nutrients they need for the first six months of life and strengthens their immune systems. Despite its importance, EBF rates in Somalia remain low, with only 5% of infants exclusively breastfed. Various factors contribute to this low uptake, including cultural beliefs that lead to the early introduction of complementary foods and a lack of awareness about the benefits of EBF. Many Somali mothers also believe breast milk alone is insufficient, contributing to these low rates.

Economic challenges, fragile healthcare systems, and lack of breastfeeding support in Somalia further exacerbate the situation. Many mothers face difficulties accessing healthcare services where they can receive breastfeeding counseling and support. Additionally, traditional practices and limited maternity leave policies prevent many mothers from maintaining EBF. Somalia's weak healthcare infrastructure, compounded by conflict and instability, results in many healthcare workers lacking proper training in breastfeeding support. Efforts to promote EBF in Somalia have been made by international organizations like UNICEF and WHO, alongside the Somali government. Initiatives include the Baby-Friendly Hospital Initiative (BFHI) and community-based interventions that train local health workers to support new mothers. However, these programs have been hindered by inadequate resources and weak enforcement of regulations such as the International Code of Marketing of Breast-Milk Substitutes. Strengthening these interventions is crucial for improving EBF rates and achieving global health and nutrition targets in Somalia.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section provides the validity and reliability of the study, ethical considerations, data analysis plan, inclusion and exclusion criteria, research design, data collection tools and procedure, study population, study area, sampling design, and sample size calculation.

3.2 Study Design

It was a descriptive cross-sectional study. This method was chosen because it helps gather a lot of data quickly and provides you with a detailed understanding of the prevalence we were studying (time factor, duration, set up of data collection which was outpatient and only one-time contact). Descriptive cross-sectional studies provided a snapshot of a population at a single point in time. This is useful when assessing the prevalence of EBF and identifying the factors (determinants) influencing the practice.

3.3 Study Location

This was a facility-based study conducted at Wadajir Health Center located in Wadajir District, also known as Madina District. It is an area situated in the South-Central Banadir region of Somalia with a population of 198,828 people (Damey, 2020). Data collection was done at the mother and child clinic of Wadajir Health Center (Appendix E). Wadajir District, also known as Madina District, is situated in the south-central Banaadir region of Somalia and encompasses several southwestern neighborhoods of Mogadishu. The district is home to significant landmarks, including the Somali National University and the former U.S. Embassy compound, now referred to as Siliga Amerikanka, which serves as a refugee camp. Additionally, the former Jaalle Ziyad Military Academy, currently utilized by the AMISOM Burundian Military Contingent, is located within Wadajir. The district's name, "Wadajir," translates to "together" in Somali, reflecting a sense of unity within the community.

Administratively, Wadajir is one of the 17 districts that comprise Mogadishu, each overseen by a district commissioner. In recent years, the district has been the focus of various initiatives aimed at enhancing security and infrastructure, including community policing programs and road construction projects. The prevalence of exclusive breastfeeding (EBF) in Mogadishu, Somalia, varies significantly across different settings and studies, reflecting disparities in breastfeeding practices among mothers. For instance, facility-based studies report EBF rates of 44% at SOS Mother and Child Hospital and 38.3% at Benadir Hospital among mothers with infants aged 0–6 months *(Mahdi et al., 2021).*

3.4 Target Population

All breast-feeding mothers with children less than 6 months seeking health-related services at Wadajir Health Center- mother and child clinic.

3.5 Data Collection Period

From August to September 2023, 8:00 am to 5:00 pm, Saturday to Thursday excluding public holidays.

3.6 Sample Size Determination

The sample size was determined using a single population proportion formula (Adugna et al., 2017).

$$n = \frac{Z^2 P(1-P)}{d^2}$$

n: Sample size

Z: Z statistics for a level of confidence

P: Expected prevalence or proportion

d: Precision

A 95% confidence level and a 5% margin of error were taken into account when calculating the sample size. Where P- the proportion of women practicing EBF (29.7%) (Mahdi et al., 2021). d^2 – Margin of error $(0.05)^2$. On calculation: -

$$N = \frac{(1.96)^2 \ (0.297)\ (1 - 0.297)}{(0.05)^2}$$

Prevalence of EBF in Somalia is 29.7%

$Z^2 = 1.96^2$
$P = 0.16$
$d^2 = 0.05^2$
Add 10% of the estimated missing data, the total number to be sampled is **353**

Therefore, the final sample size was 353 participants.

3.7 Sampling Method

The systematic sampling method were used among eligible mothers with infants aged less than six months. Patients were registered in the clinic book and then sent to the nursing desk for anthropometric measurements. At the nursing station, an assistant researcher was available to conduct the systematic sampling. The first patient of the day was noted as the first study participant. The sampling process began with a random selection of one element from the list and continued by selecting every k-th element in the frame, where k is the sample interval. Annually, 12,436 postnatal visits take place at the Wadajir Health Facility. The calculated sample size were 353. Dividing this number by the data for two months resulted in a k-value of 2. The number of women breastfeeding for less than six months who visit the facility each month is 352; over two months, this amounts to 705 mothers.

3.8 Inclusion Criteria

- Mother-infant pair with infants aged less than 6 months.
- Mothers who are above 18 years and have accepted to take part in the study.

- Mothers who have lived in the study area for at least six months before the study.

3.9 Exclusion Criteria

- Mothers with infants older than six months at the time of data collection.
- Mothers who do not reside permanently in Wadajir District (e.g., visitors or those recently relocated).
- Mothers or infants with serious medical conditions that interfere with breastfeeding (e.g., mothers with contraindications to breastfeeding, infants with metabolic disorders).

3.10 Research Instruments

A structured questionnaire was used in data collection, and it was filled with the help of a research assistant. (Appendix D).

3.11 Validity and Reliability of Data

To ensure construct validity, the study variables such as exclusive breastfeeding, skin-to-skin contact, maternal occupation, and breastfeeding duration—were clearly defined and measured using structured questionnaires that aligned with the study objectives and were informed by current literature and WHO indicators. This helped ensure that the tools accurately captured the intended concepts.

In terms of reliability, the questionnaire was pre-tested among a small sample of mothers in a neighboring district with similar demographic characteristics to the Wadajir District. Feedback from the pre-test was used to refine the wording and structure of questions for clarity and consistency. Furthermore, the internal consistency of the questionnaire was assessed using Cronbach's alpha, which yielded a value of 0.78, indicating the acceptable

reliability of the instrument. Together, these measures enhanced the trustworthiness and consistency of the study findings.

3.12 Data Collection Tools and Procedure

Data-collecting process was done to guarantee that the reliability estimate is achieved. The data collection served as the foundation for reliability estimations.

Collection consistency: Data was continuously collected and presented in the same approach.

- Completeness: Till every question on the questionnaire has been answered, all data has been gathered. It was studied.

A) Mother and baby pairs presenting to the mother and child clinic for health-related care were added to the research as per the study protocol.

B) The study participants were drawn from a sample using a sampling technique.

C) The research assistant explained the study procedures, and then consenting was done.

D) Study participants were then directed to the researcher, where a structured closed-end questionnaire was employed to gather the data.

A semi-structured questionnaire, along with personal interview schedules, were used to collect all the necessary information for the research. Structured interview schedules and closed-ended questions were employed during the data collection process. Since most people in the area were more comfortable speaking their local language, the questionnaires were initially created and prepared in English before being translated into Somali. Before any questions were asked, mothers were provided with informed consent, and only those who agreed to participate filled out the questionnaires. A Likert scale was used to assess the level

of knowledge, mothers who strongly agreed and agreed to questions were regarded as knowledgeable while mothers who disagreed and strongly disagreed were regarded as not knowledgeable. Practices were categorized into good and poor practices. We also reviewed and adapted an exclusive breastfeeding (EBF) questionnaire previously used in Knowledge, Attitudes, and Practices (KAP) surveys in Hand in Hand for Syria, Human Appeal International, Independent Doctors Association, International Medical Corps, and Physicians across Continents, Qatar Red Crescent and Syria relief and across different African Asia countries. This adaptation was tailored to my research to better capture the perceptions and knowledge of EBF among mothers

3.13 Data Analysis

To compare the impact of various factors on exclusive breastfeeding practices, data was entered into SPSS version 26 and Excel 2010. Chi-square tests were utilized, with independent variables such as cultural barriers, maternal barriers, policy barriers, and health system barriers, while the dependent variable was exclusive breastfeeding. To analyze patterns of exclusive breastfeeding, basic descriptive analysis was performed using frequency distribution. Percentages were used to assess prevalence and identify barriers. The distribution of exclusive breastfeeding by age and gender was presented in proportions and ratios. Data visualization techniques, including tables, graphs, and pie charts, were employed for presentation. Chi-square tests were used for hypothesis testing to determine whether a process or treatment had an effect and to compare variables. The findings were presented using tables, charts, graphs, and frequency distributions.

3.15 Ethical Consideration

Ethical clearance was granted by the Mount Kenya University Ethics Board with reference number MKU/ISERC/2910, which enabled the researchers to obtain further ethical clearance

from the Banadir Regional Administration and the health facility administration. Permission to conduct the survey was also granted, and participation in the study was voluntary. Informed consent was obtained from all participants after clearly explaining the purpose, procedures, potential risks, and benefits of the study in a language they understood. Participation was entirely voluntary, and mothers were informed of their right to withdraw from the study at any time without facing any consequences. Confidentiality and privacy were maintained by anonymizing data and securely storing all information. Data collected was stored in a computer folder and encrypted with a password to ensure confidentiality. Study protocols were explained to the participants, and they were made aware that their clinical data would be used for research purposes. There was no coercion, and participants had the right to withdraw from the study at any time. The study details were clearly explained to participants in a language they understood, emphasizing that participation was voluntary and that no material or financial incentives would be provided. If they agreed to participate, they were required to provide either a thumbprint or a signature on the consent section of the questionnaire.

CHAPTER FOUR:

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

One of the most critical phases in the research process is the analysis, presentation, and interpretation of data. These steps are essential for converting raw data into meaningful insights and conclusions that address the research questions and objectives. Data analysis involves processing and examining the data to identify patterns, trends, and relationships that can inform the research. This step is crucial in drawing valid and reliable conclusions. This chapter will focus on presenting the findings of the study and interpreting the results based on the data collected. By carefully analyzing the information gathered, this section will discuss the insights gained and their relevance to the research objectives.

4.2 Research Presentation, Interpretation, and Discussion

The study population consisted of 353 mothers who had children younger than six months of age. This sample size was chosen to capture a broad range of experiences and factors influencing exclusive breastfeeding (EBF) practices. The demographic characteristics of the mothers were key variables of interest, as these can have significant impacts on breastfeeding behaviors and outcomes. Variables such as age, educational background, employment status, and number of antenatal care (ANC) visits were examined to understand their relationship with exclusive breastfeeding. For instance, maternal age can influence breastfeeding knowledge and practices, with younger mothers potentially having less experience and knowledge about the benefits of EBF compared to older mothers. Similarly, a mother's educational level often correlates with health literacy, which may affect her decision to exclusively breastfeed.

Employment status was another crucial variable, as working mothers may face challenges in maintaining EBF due to workplace policies, lack of maternity leave, or the absence of facilities for breastfeeding or expressing milk. ANC visits are equally critical, as they provide opportunities for healthcare providers to educate and encourage mothers to practice EBF. Studies have shown that frequent ANC visits are linked with higher rates of EBF, as mothers receive the necessary support and information regarding optimal feeding practices for their infants. These demographic characteristics provided valuable insights into the factors that either promote or hinder exclusive breastfeeding practices among mothers of young infants. Understanding these variables helps in designing targeted interventions that address specific barriers to EBF, particularly in regions like Somalia, where cultural, economic, and healthcare-related challenges play significant roles in breastfeeding practices.

4.3 Discussion of The Individual Objective Results

The primary objective of the study was to assess the prevalence and determinants of exclusive breastfeeding (EBF) among mothers with infants aged under six months in the Wadajir district, Banadir region, Somalia. This focus on EBF is crucial because it is known to significantly contribute to infant survival, growth, and development, especially in resource-constrained settings like Somalia, where child malnutrition and mortality rates are high.

4.3.1. Demographic Characteristics

The study aimed to explore several demographic characteristics to understand their influence on exclusive breastfeeding (EBF) practices among mothers with infants under six months of age. The key variables examined included:

Age of the Infant. The study sought to understand how the age of the infant affected EBF practices. Breastfeeding recommendations suggest that infants should be exclusively breastfed for the first six months of life. The study aimed to assess whether EBF rates decline

as infants grow older, potentially identifying the average duration mothers adhere to EBF before introducing other foods or liquids.

Duration of EBF in Months. This variable is central to the study, as it seeks to measure how long mothers exclusively breastfeed their infants. By looking at the specific duration in months, the research can provide insights into whether mothers follow the recommended six months of EBF or stop earlier, and at what point complementary feeding begins. Understanding this trend is crucial in addressing gaps and promoting longer breastfeeding periods.

Gender of the Infant. The study also considered whether the gender of the infant had any influence on EBF practices. In some cultures, gender-based preferences and beliefs might affect how mothers feed their babies. For example, boys may be fed differently from girls due to cultural notions about nutritional needs or societal expectations. The research aimed to determine if such biases existed and how they impacted EBF duration and adherence.

Age of the mother. Maternal age is an important factor that can influence breastfeeding practices. Younger mothers may lack experience or knowledge about the benefits of EBF, while older mothers might have more exposure to health information and previous experience with breastfeeding. The study examined how the mother's age affected her ability to exclusively breastfeed, with the potential to identify trends or challenges faced by different age groups.

The age range of the children studied is varying. 56% of the studied children are between 5-6 months old, while the second highest is 31% of 3-4 months old children, between 1-2 months is the least age group that is visited in the health facility which is 14%. The study revealed that the more the child is growing the more the visit to the health facility increases..

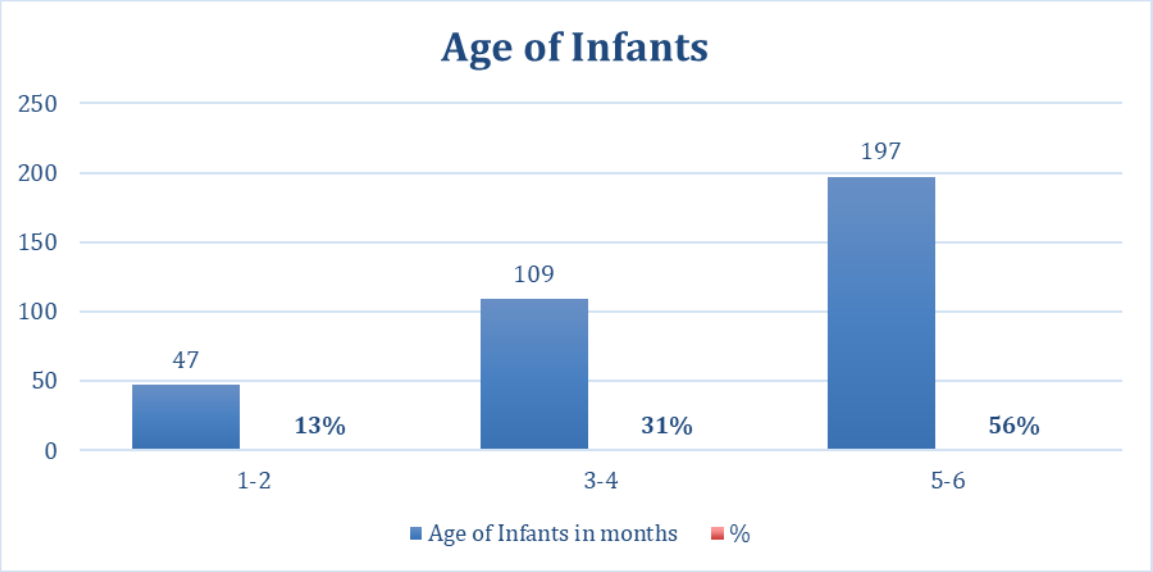


Figure 3; Age of Infants in months

Figure 4, shows the distribution of infants under six months who participated in the study and were breastfeeding at the time. The majority were female, accounting for 53%, while males made up 47%. There was no significant difference in breastfeeding rates between male and female infants.

This aligns with findings from a study in Ethiopia, which reported that female infants were more likely to be exclusively breastfed compared to male infants. The Ethiopian study suggested that cultural perceptions, such as the belief that male infants have a more voracious appetite requiring additional food, might lead to the earlier introduction of complementary feeding for boys(Tsegaw et al., 2021).

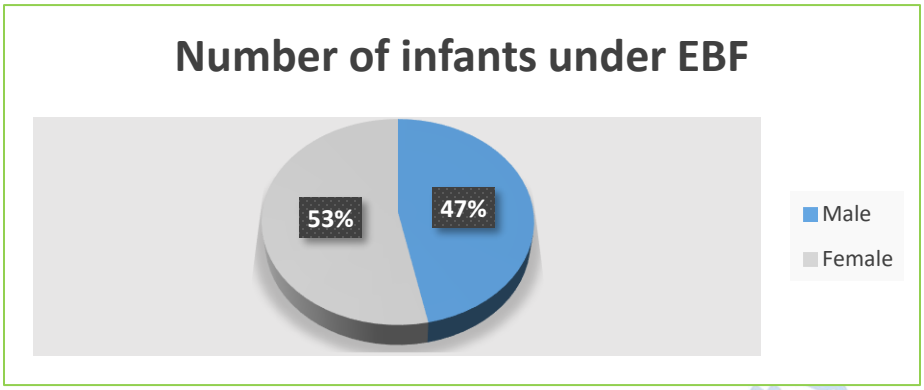


Figure 4; Gender of infants under EBF

4.3.2 Maternal Factor (Knowledge and Practice of EBF)

Skin-to-skin contact is a key indicator of successful exclusive breastfeeding (EBF). Our analysis examined this practice among different categories of mothers surveyed. Findings revealed that housewives who engaged in skin-to-skin contact immediately after birth were more likely to continue EBF for longer durations (5-6 months), suggesting a positive influence of early skin-to-skin contact on EBF duration. Additionally, a higher percentage of housewives (73%) reported practicing skin-to-skin contact compared to employed individuals (68%). Conversely, the percentage of mothers who did not engage in skin-to-skin contact was higher among employed individuals (32%) than housewives (27%). These differences may be attributed to factors such as lifestyle, time availability, and the nature of daily responsibilities in each group.

The observations regarding the positive influence of immediate skin-to-skin contact (SSC) on the duration of exclusive breastfeeding (EBF) among housewives align with findings from various studies. Research indicates that SSC immediately after birth significantly enhances breastfeeding success and prolongs its duration. A systematic review and meta-analysis demonstrated that mother-infant SSC had a notably positive effect on the success and duration of first breastfeeding sessions(Karimi et al., 2019). Furthermore, a retrospective

cohort study in Nova Scotia found that mothers who practiced SSC were more likely to exclusively breastfeed at four months postpartum compared to those who did not engage in SSC. These findings suggest that SSC fosters a stronger mother-infant bond, which may encourage prolonged breastfeeding practices (Bedford et al., 2022). Regarding the higher prevalence of SSC among housewives compared to employed mothers, it's plausible that housewives may have more flexibility and time to engage in immediate and prolonged SSC after birth. Employed mothers might face time constraints or workplace challenges that limit opportunities for SSC and continued EBF. While direct studies comparing SSC rates between housewives and employed mothers are limited, the general association between SSC and increased breastfeeding success underscores the importance of promoting SSC across all maternal demographics.

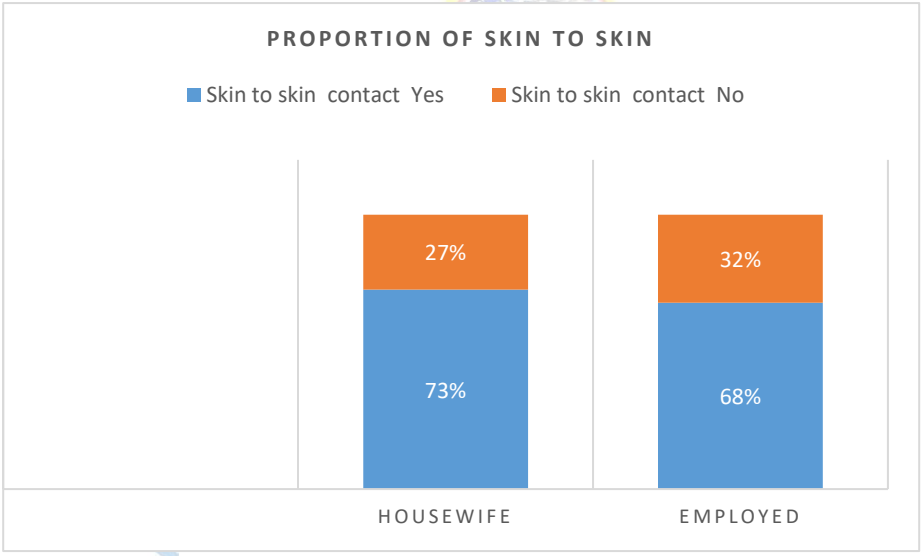


Figure 5: Proportion of skin-to-skin contact Housewife and employed

Housewives, who may spend more time at home, might have more opportunities for skin-to-skin contact, which could contribute to the higher percentage in this group. On the other hand, employed individuals might have less time for such interactions due to work commitments and schedules, resulting in a slightly lower percentage. This analysis highlights a notable difference in the incidence of skin-to-skin contact between housewives and employed individuals. While a significant majority in both groups reported engaging in skin-to-skin contact, housewives exhibited a higher prevalence. The dataset below provides insights into the patterns of skin-to-skin contact immediately after birth across different occupations and age groups.

Housewives: More likely to have skin-to-skin contact immediately after birth, particularly in the 25-30 and 31-35 age groups. Housewives form the largest group in this dataset, spanning a wide age range from 18 to 49 years. Interestingly, a significant number of housewives, particularly those aged 25-30 and 31-35, reported engaging in skin-to-skin contact immediately after birth. This trend might reflect a greater focus on traditional and nurturing roles associated with housewives, where the importance of early maternal-infant bonding is well-recognized and practiced. Salaried employed: Fewer occasions of skin-to-skin contact compared to housewives. The most common age group for skin-to-skin contact is 18-24. Among Salaried employed women, the practice of skin-to-skin contact is less prevalent compared to housewives. The data shows that younger salaried employees, especially those aged 18-24, are more likely to practice skin-to-skin contact, possibly indicating a generational shift towards embracing this practice. The lower overall numbers might reflect the challenges faced by working women in balancing professional commitments with the immediate demands of childbirth and infant care.

Self-employed: Balanced distribution between those who had and had not had skin-to-skin contact. Skin-to-skin contact is more common in older age groups (25-40). Self-employed women present a more balanced picture. The data shows a nearly equal distribution of those practicing and not practicing skin-to-skin contact. Notably, self-employed women aged 25-40 show a strong inclination towards this practice, suggesting that the flexibility associated with self-employment might afford them more opportunities to prioritize early bonding with their newborns. Students: Predominantly have skin-to-skin contact immediately after birth. Mainly in the 18-24 age group.

A study conducted in Ethiopia found that unemployed mothers (mostly housewives) were significantly more likely to practice early skin-to-skin contact compared to employed mothers, primarily due to their greater availability for infant care and fewer work-related constraints (Fekadu et al., 2019). Similarly, research in Ghana revealed that women engaged in formal employment had lower rates of immediate skin-to-skin contact, as they often returned to work soon after delivery, limiting their time for uninterrupted bonding with their newborns (Diji et al., 2017).

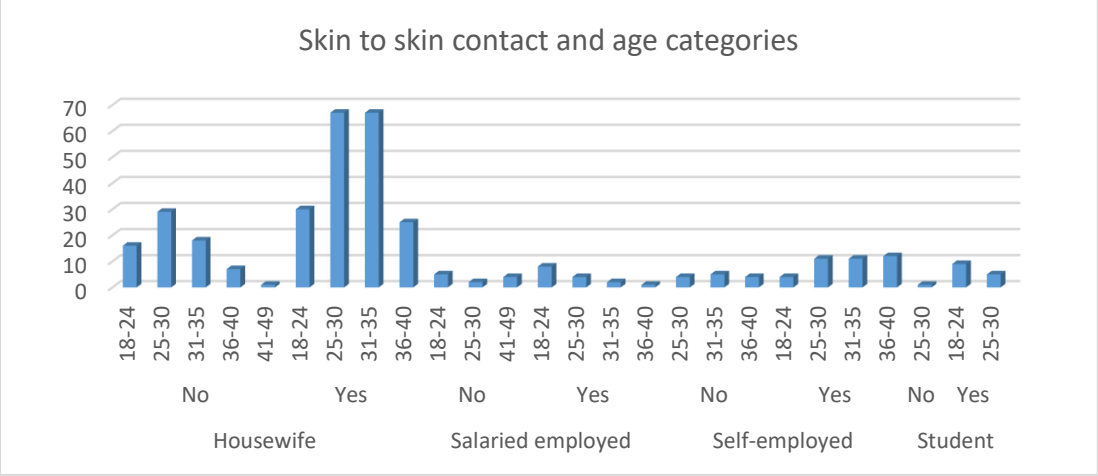


Figure 6; Indicator of Good BF

The total of 353 instances highlights that skin-to-skin contact is a widely acknowledged practice, though its prevalence varies significantly across different occupations and age groups. The data suggests that cultural, educational, and occupational factors play a crucial role in determining the likelihood of engaging in skin-to-skin contact immediately after birth.

In conclusion, while housewives and younger individuals across various occupations are more likely to practice skin-to-skin contact, there remains room for increasing awareness and support for this beneficial practice among salaried employees and older age groups. By understanding these patterns, healthcare providers can better tailor their educational and support programs to encourage skin-to-skin contact across all demographics, ensuring that more mothers and newborns can benefit from this vital early bonding experience.

The figure below details the knowledge and understanding of the mothers about EBF duration. 41% of the mothers studied responded that the duration of EBF is between 5-6 months, while 35% of the respondents think EBF lasts between 3-4 months, and 24% of those mothers studied responded that EBF duration is between 0 - 2 months, this doesn't explain that mothers with children of 2 months have got less knowledge of EBF but rather explains the lower age the child is the less visit to the health facility.

Similar patterns have been observed in other studies. For instance, research conducted in Ghana revealed that approximately 26% of mothers were unable to correctly define EBF, with some believing that breast milk alone was insufficient for the child's nutritional needs(Kundu et al., 2024). Additionally, the study found that mothers with higher education levels were more likely to practice EBF, suggesting a correlation between maternal education and knowledge about breastfeeding practices. In rural Kenya, a study found that mothers'

knowledge of breastfeeding recommendations was associated with a lower risk of premature cessation of EBF. This suggests that improving maternal knowledge could positively influence the duration of EBF*(Gewa & Chepkemboi, 2016).*

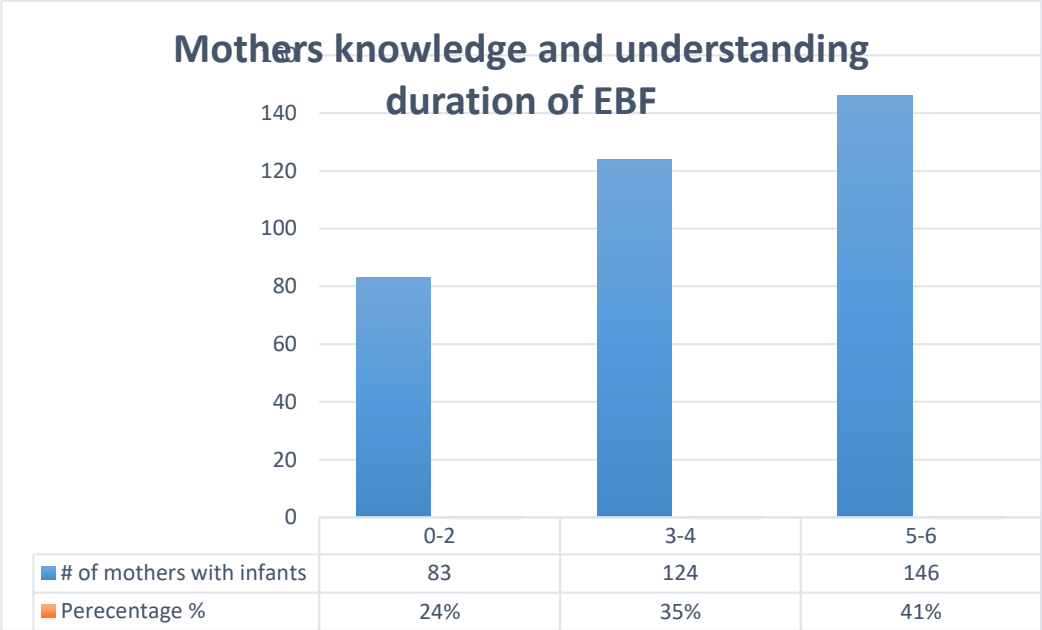


Figure 7; Duration of EBF By the Infants

Further analyses were done to find out the proportion of knowledgeable and unknowledgeable mothers about exclusive breastfeeding, and 50 mothers of housewives and employed were analyzed.

Proportion Calculation

•Mothers practicing EBF for 5-6 months are knowledgeable.

•Mothers practicing EBF for 0-2 months are unknowledgeable.

Mothers practicing EBF for 3-4 months are partially knowledgeable.

Housewives

•Knowledgeable (5-6 months): 10 out of 25

•Partially Knowledgeable (3-4 months): 6 out of 25

•Unknowledgeable (0-2 months): 9 out of 25

Salaried Employed

•Knowledgeable (5-6 months): 8 out of 25

•Partially Knowledgeable (3-4 months): 10 out of 25

•Unknowledgeable (0-2 months): 7 out of 25

1. Knowledgeable Mothers:

A higher proportion of housewives (40%) are knowledgeable about EBF compared to employed mothers (32%). This suggests that housewives might have more time to practice EBF or could be benefiting from community and family support.

2. Partially Knowledgeable Mothers: Employed mothers have a higher proportion (40%) of partially knowledgeable individuals compared to housewives (24%). This might indicate that while these mothers receive some information about EBF or are aware of exclusive breastfeeding, workplace constraints limit their ability to fully practice it.

3. Unknowledgeable Mothers:

A higher proportion of housewives (36%) are unknowledgeable compared to salaried employed mothers (28%). This could be due to a lack of structured information and support systems available to housewives, highlighting a need for targeted education programs.

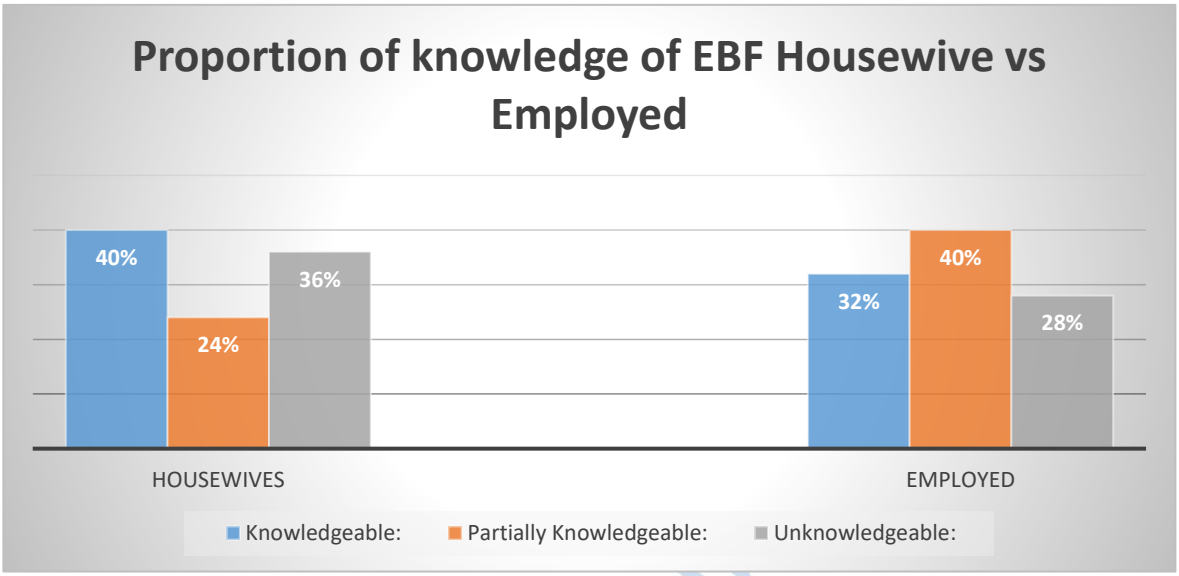


Figure 8; Proportion of knowledge

Mothers' knowledge about breastfeeding was assessed based on their responses to three targeted questions. Participants who answered at least two out of the three questions correctly were classified as knowledgeable, while those who correctly answered only one question or none were categorized as unknowledgeable. This approach provided a clear and structured evaluation of breastfeeding knowledge.

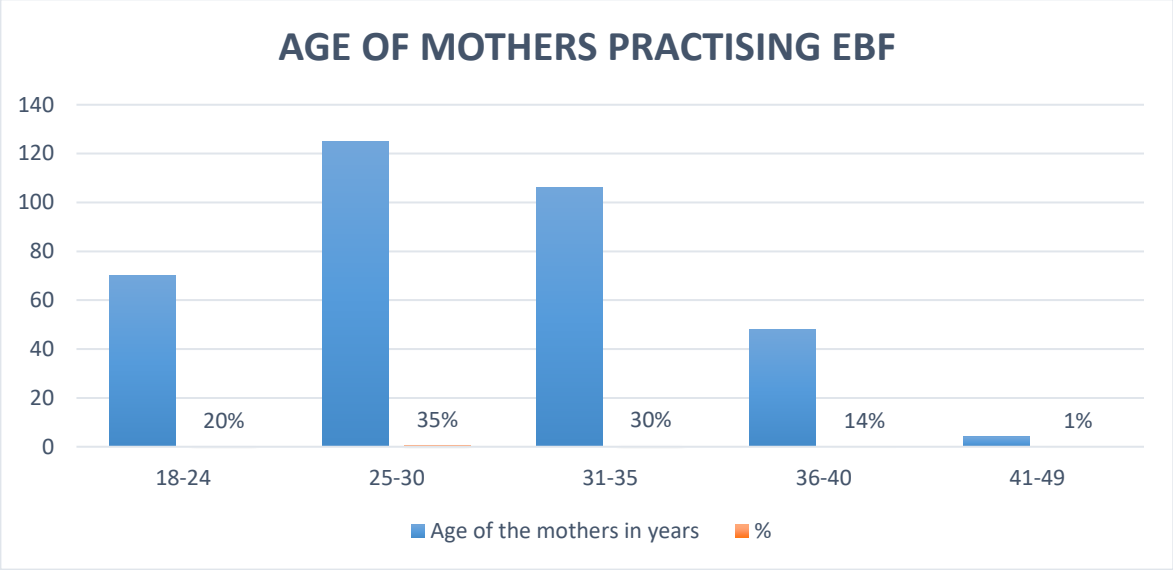


Figure 9; Age of breastfeeding mothers

The study found out that, 35% of the mothers who are visiting the health facility are between the age of 25 to 30 years old, and 30% is between the age of 31 to 35 years these two age groups represent 65% of the population studied and they do EBF more than the other age groups older or less than those ages, followed by 20% of the mothers who are between 18-24 years do perform EBF this explains that new mothers are not performing EBF compared to the other older age group while between 36-40 year of age is 14%, and the least age group which is 1% of the mothers are between 41-49 years who do perform EBF. The study found out that at the age from 25 years is when EBF practicing is gradually increases and again start to decrease as the age increases above 35 years, so this explains that mothers at this age are doing EBF more than the other age groups and do visit health facilities more often than the other age groups.

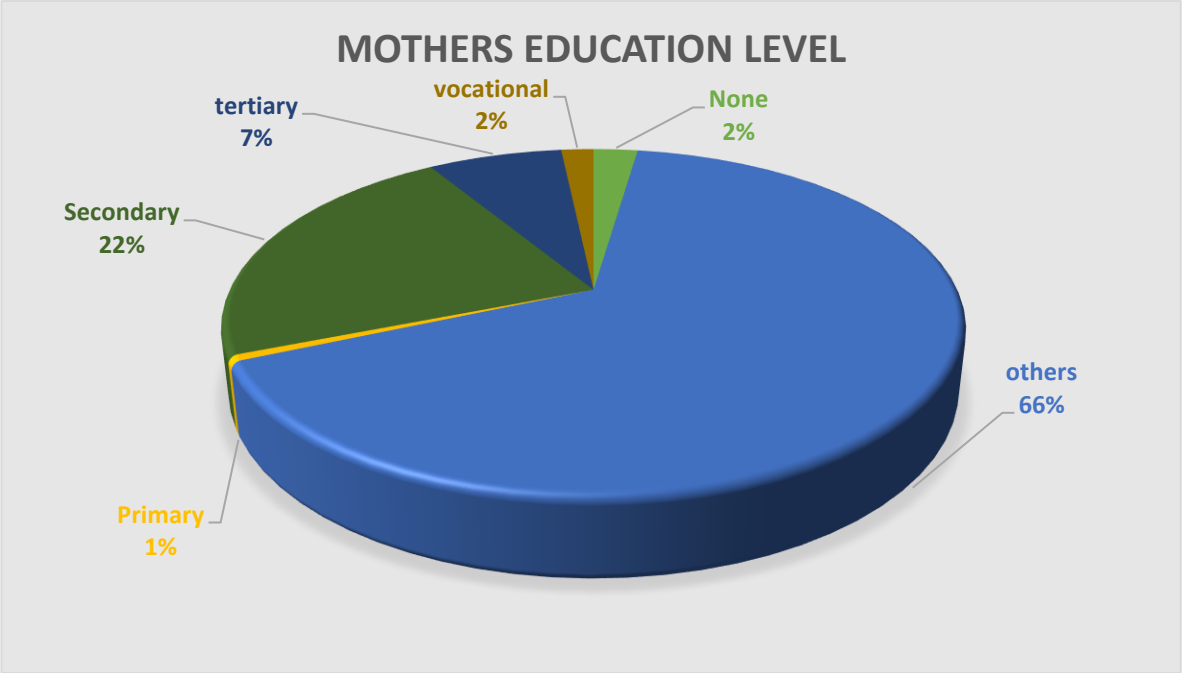


Figure 10; Mothers' education level

The study discovered a correlation between EBF and the mother education level. 66% of the mothers did not have a formal education, but at least have attended Quranic schools. and 22% of the mothers who visited the facility during the study period had completed secondary school education, there is 7% of the mothers who completed tertiary education, and 2% of the mothers did not have any education formal or informal. out of the 32% that had got different levels of education 73% of them responded the EBF question is 5-6 months, it demonstrates EBF's understanding and the relationship between educational attainment and overall infant feeding specifically to exclusive breastfeeding.

A systematic review of studies from Sub-Saharan Africa indicated that maternal education plays a crucial role in improving breastfeeding practices. Mothers with some levels of formal education were more likely to receive and understand health messages about EBF,

making them more likely to adhere to the WHO recommendations *(Acharya & Khanal, 2015).*

From Chi-square we have a P value of 0.213 which is bigger than the alpha value of 0.05 from this we can reject the null hypothesis of that there is no relationship between maternal determinants and low rates of EBF, which is now there is a significant difference occupation and EBF, and low rates of EBF is linked to maternal determinants. Most of the participants of this study are not employed 76% of them are housewife, and only 20% are employed, either self-employed or salaried, and interestingly 4% of the study population were students. Maternal employment status can affect the incidence of exclusive breastfeeding amongst mothers who work and those who don't. Compared to mothers who are employed, mothers without employment are more likely to nurse their children exclusively.

Table 2; Mothers' occupation and EBF

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12.000[a]	9	.213
Likelihood Ratio	11.090	9	.270
N of Valid Cases	4		

a. 16 cells (100.0%) have expected count less than 5. The minimum expected count is .25.

The study found that 58% of the population surveyed were found to have more than 1 to 5 children, while 39% of those have between 6 – 10 children, and only 3% of the population studied have more than 10 children. However early pregnancy and cessation of breastfeeding are linked to one another, as there is a strong cultural belief that a pregnant mother can't breastfeed another child regardless of age. Similar cultural beliefs have been documented in other studies. For instance, a study conducted in the Korogocho and Viwandani slums of Nairobi, Kenya, highlighted sociocultural factors influencing breastfeeding practices. It reported that certain beliefs and misconceptions, such as the notion that breastfeeding while pregnant can harm the unborn child or the breastfeeding infant, lead to early cessation of breastfeeding. These beliefs are often rooted in cultural norms and are passed down through generations, impacting breastfeeding duration and exclusivity(Wanjohi et al., 2017).

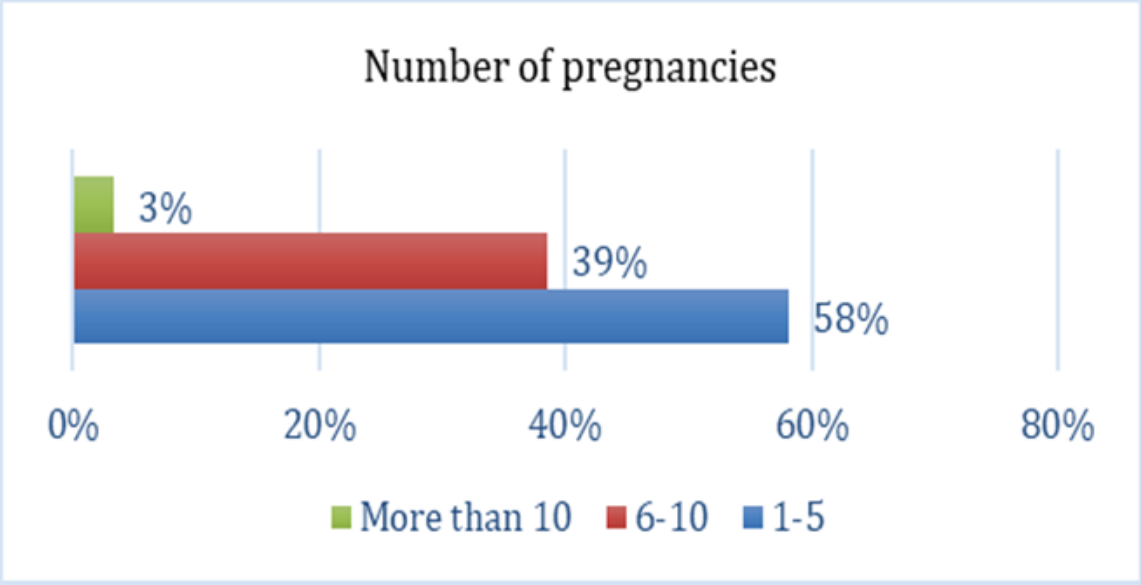


Figure 11: Mother's number of pregnancies

Table 3: Number of Pregnancies of the mother

			Numbers of EBF mothers			Total
			12.00	136.00	205.00	
Number of Pregnancies of the mother	1-5	Count	0	0	1	1
		% within Number of Pregnancies of thr mother	0.0%	0.0%	100.0 %	100.0 %
		% within Numbers of EBF mothers	0.0%	0.0%	100.0 %	33.3%
	6-10	Count	0	1	0	1
		% within Number of Pregnancies of thr mother	0.0%	100.0 %	0.0%	100.0 %
		% within Numbers of EBF mothers	0.0%	100.0 %	0.0%	33.3%
	More than 10	Count	1	0	0	1
		% within Number of Pregnancies of thr mother	100.0 %	0.0%	0.0%	100.0 %
		% within Numbers of EBF mothers	100.0 %	0.0%	0.0%	33.3%
Total		Count	1	1	1	3
		% within Number of Pregnancies of th mother	33.3%	33.3%	33.3%	100.0 %
		% within Numbers of EBF mothers	100.0 %	100.0 %	100.0 %	100.0 %

Given that the Chi-square result gives us a P value of 0.199, which is greater than the alpha value of 0.05, we may reject the null hypothesis. There is a statistically significant correlation between EBF and the number of pregnancies. Because of having frequent and close pregnancy outweigh EBF and overall breastfeeding, and infant care.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.000[a]	4	.199
Likelihood Ratio	6.592	4	.159
N of Valid Cases	3		

4.3.3 Health Factor

The World Health Organization (WHO) recommends starting antenatal care (ANC) in the first trimester and scheduling antenatal appointments at least eight times during pregnancy in order to lower the high rates of stillbirths, maternal mortality, perinatal deaths, and infant deaths that may be prevented. But a lot of women in developing nations don't follow to these recommendations or may not get access to ANC due to several reasons. Three visits are required for the ANC procedure: one in the first trimester, one in the sixth month, and two in the seventh and ninth months of pregnancy. Receiving prenatal care during pregnancy does not ensure that the mother will receive interventions that are helpful in improving her health. When a pregnant woman has attended four appointments with a health service facility or a midwife, her prenatal treatment is considered finished. As advised by the World Health Organization, a woman who receives antenatal care at least four times is more likely to receive appropriate maternal health interventions during antenatal appointments.

Receiving adequate ANC is associated with several positive outcomes. Reduced Risk of Complications: Regular ANC visits help in the early identification and management of

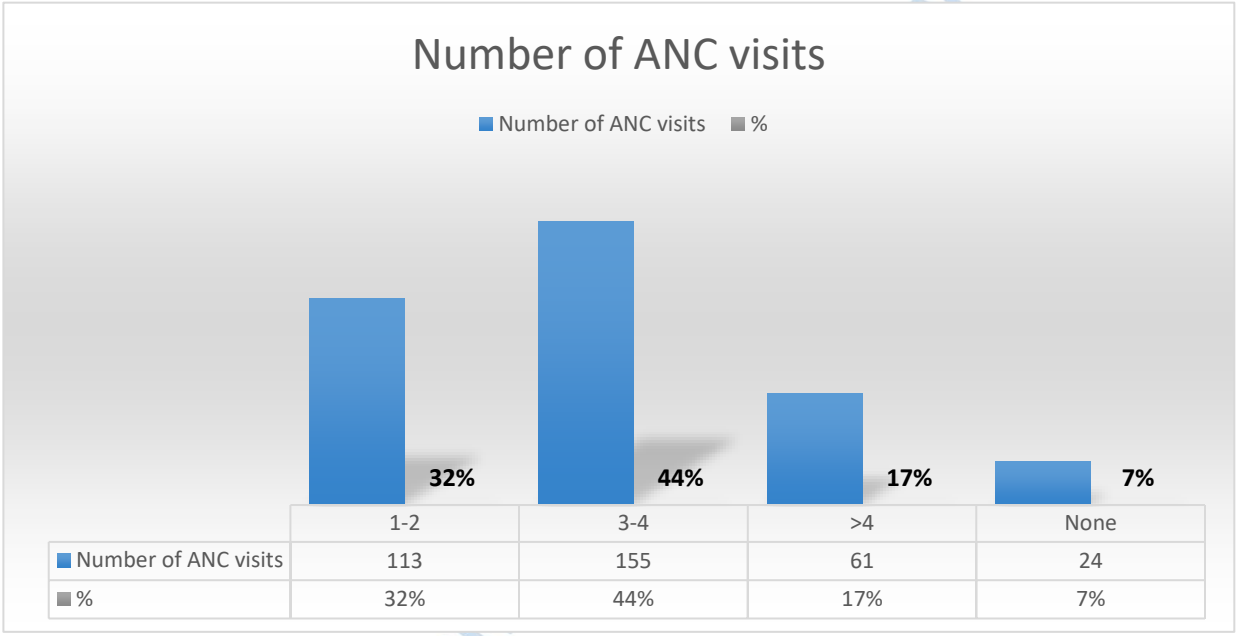
complications such as pre-eclampsia, gestational diabetes, and fetal growth restriction. Improved Maternal and Infant Health. Proper ANC is linked to lower rates of stillbirths, maternal mortality, perinatal deaths, and infant deaths. It also enhances the likelihood of a safe delivery and positive postnatal outcomes.

Access to Interventions. During ANC visits, healthcare providers can offer crucial interventions, such as vaccinations, nutritional counseling, and guidance on childbirth and breastfeeding. Antenatal care is a critical component of maternal and infant health, with substantial evidence supporting its role in reducing adverse pregnancy outcomes. The WHO guidelines advocate for starting ANC early and attending at least eight visits during pregnancy. However, in developing nations, various barriers can impede adherence to these recommendations. Addressing these challenges requires a multifaceted approach, including improving healthcare infrastructure, increasing access to services, educating communities, and enhancing the healthcare workforce. Ensuring that all pregnant women have access to quality ANC can significantly improve health outcomes for mothers and their infants.

In this study, we included several ANC visits to understand if the mothers have been accessing the service including the information and education related to breastfeeding specifically EBF, early initiations, and overall infant feeding and care practices. Only 7% of those did not access ANC, while 17% utilized ANC more than four times, 44% of those did ANC visit three to four times, and 32% did one to two visits.

A systematic review and meta-analysis found that mothers who attended four or more ANC visits were 1.55 times more likely to practice EBF compared to those with fewer visits. Similarly, mothers who received postnatal care (PNC) counseling were 2.43 times more likely to engage in EBF(Agusningtyas et al., 2023). This underscores the importance of both

ANC and PNC in promoting optimal breastfeeding practices. Another meta-analysis reported that mothers who had ANC visits were 1.50 times more likely to exclusively breastfeed than those who did not(Wardani & Utomo, 2022). This suggests that ANC visits provide critical opportunities for educating mothers about the benefits and practices of EBF



	1-2	3-4	>4	None
Number of ANC visits	113	155	61	24
%	32%	44%	17%	7%

Figure 12: Numbers of ANC visits by the mother.

4.3.4 Analysis of ANC Visits and Breastfeeding Initiation and Knowledge.

The below data breaks down the number of antenatal care (ANC) visits and their correlation with the initiation of breastfeeding (BF) and knowledge of exclusive breastfeeding (EBF). With equal data from two categories.

Table 4. Data Summary ANC Visits vs EBF

Both categories (More than 3 visits and zero or 1-2 visits of ANC) have 122 participants each.

Number of ANC Visits	Total	Initiation of BF	Not initiated	Knowledge of BF	Not known EBF
More than 3 visits	122	105	17	36	86
Zero or 1 to 2 visits	122	86	36	29	93

A higher number of ANC visits is associated with a higher rate of breastfeeding initiation. Participants with more than 3 ANC visits had an 86.1% initiation rate compared to 70.5% for those with fewer visits.

Knowledge of EBF is slightly higher among those with more than 3 ANC visits (29.5%) compared to those with zero or 1-2 visits (23.8%). This suggests that more frequent ANC visits may positively influence awareness and understanding of EBF. Despite the higher number of ANC visits, a significant portion of participants (70.5% for more than 3 visits, 76.2% for zero or 1-2 visits) lack knowledge of EBF. This indicates a potential gap in the content or effectiveness of the education provided during ANC visits.

The data indicates that more frequent ANC visits correlate with higher rates of breastfeeding initiation and slightly better knowledge of exclusive breastfeeding. However, there is still a considerable gap in EBF knowledge among all participants, highlighting the need for enhanced educational efforts during ANC visits to improve understanding and practices related to exclusive breastfeeding.

The regular use of antenatal care improves the mother and child health outcomes of maternal health initiatives. The number of antenatal care services is influenced by contextual and sociodemographic variables. In terms of individual characteristics, the number of prenatal care visits was positively correlated with older age, greater income, and higher educational status. On the other hand, a lower number of antenatal visits was linked to parity, delivery

gestational age, ANC initiation date, and pregnancy-related illness concerns. Contextual factors that were linked to ANC service utilization included client welcome, appreciation, waiting time for services, and distance from a medical facility.

It is noted that 91% of the population surveyed had normal deliveries and 9% of those had CS deliveries**.** Caesarian Section delivery affects early initiation of breastfeeding, while the mothers can still do early initiation and EBF after CS delivery again, it was noted that early initiation and exclusive breastfeeding were not adequate after CS. Not only is breastfeeding possible following a C-section, but most doctors advise it as the healthiest way to feed newborns. However, some challenges might make the process more challenging while learning to breastfeed after undergoing major surgery.

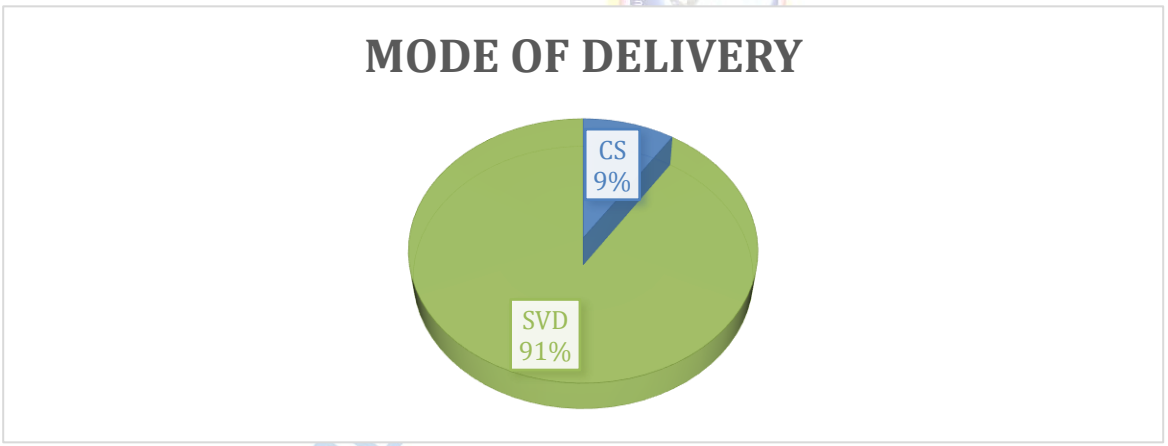


Figure 13; Mode of delivery.

From the graph above, 41% of the mothers studied were delivered in a hospital, 34% delivered by a traditional midwife, and 24% delivered at home, there is not much difference between exclusive breastfeeding practice and early initiation in the three categories deliveries and all the categories are more likely to do EBF.

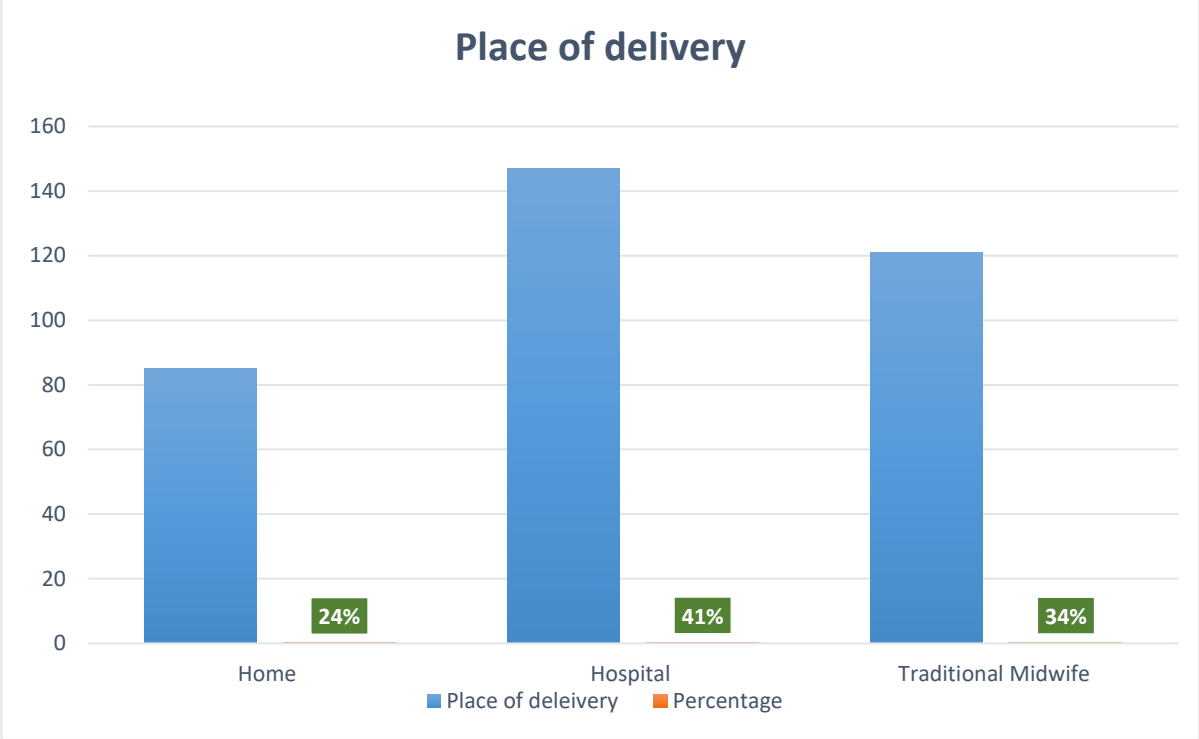


Figure 14: Place of delivery.

4.3.5 Early Initiation of Breastfeeding and The Place of Birthing

The relationship between early initiation of breastfeeding and the place of birth is a critical aspect of maternal and infant health. Understanding how the place of birth influences early breastfeeding practices can help in developing strategies to promote optimal breastfeeding behaviors. The place of birth whether it is at home, a health center, or a hospital can significantly impact the likelihood of early initiation of breastfeeding. The SHDS 2020 states that early breastfeeding initiation within the first hour of delivery is 60% in Somalia, as there is a correlation between the two factors. According to this study, 87% of women who gave birth in a hospital began breastfeeding within the first hour of the baby's birth, whereas just 13% of women did not begin breastfeeding as soon as the baby was born. As opposed to house deliveries, where 69% of cases involve BF initiating during the first hour.

4.3.6 Breastfeeding Messages During Pregnancy and Breastfeeding

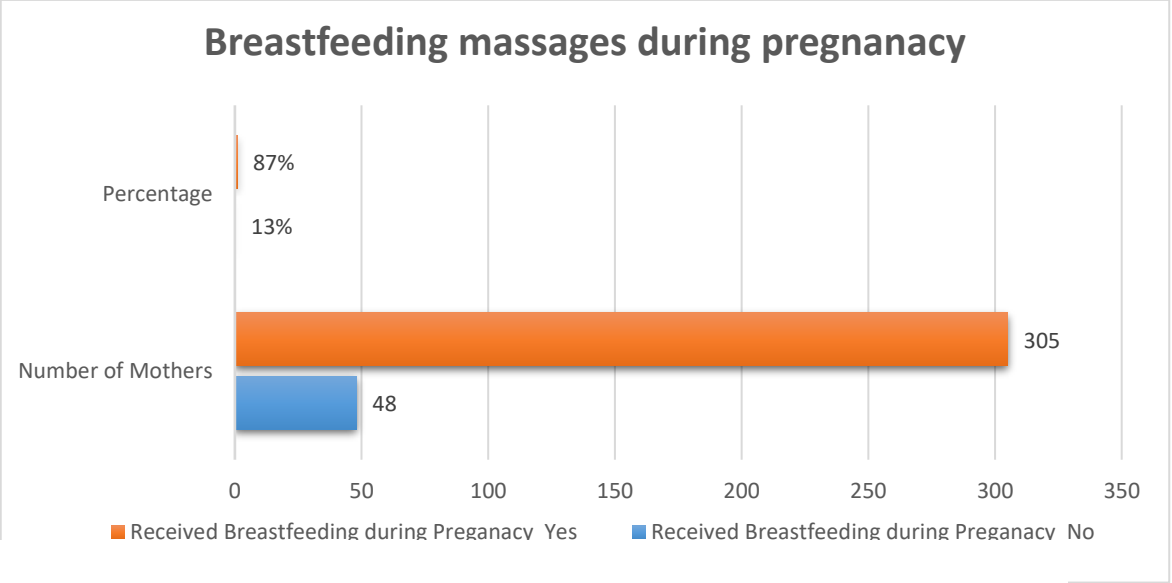


Figure 15:Breast feeding message received during pregnancy

A health worker served as the primary source of information about breastfeeding and health. Through health facility and ANC Visit, or health worker visited at home, out of the 353 mothers interviewed 87% of those received health and breastfeeding massages, and 13% did not receive health and nutrition-related massages.

of those 87%, who received health and nutrition massages during pregnancy 90% of them received from a health worker either home visit of the health worker or at antenatal care visit at the health facility, and 10% of them received from mass media.' hese findings align with previous studies highlighting the role of healthcare professionals in disseminating breastfeeding and maternal nutrition information. A study in Ethiopia found that mothers who received breastfeeding counseling from healthcare providers during ANC visits were twice as likely to exclusively breastfeed compared to those who did not receive such

counseling (Tadesse et al., 2021). Similarly, research in Kenya demonstrated that direct interactions with healthcare providers were more effective in improving breastfeeding knowledge and practices than exposure to mass media campaigns alone (Kimani-Murage et al., 2018).

Moreover, a systematic review by Rollins et al. (2016) emphasized that skilled breastfeeding counseling from health professionals significantly improves exclusive breastfeeding rates. However, studies also indicate that mass media can play a complementary role in reinforcing breastfeeding messages, especially for mothers with limited healthcare access (Nguyen et al., 2019).

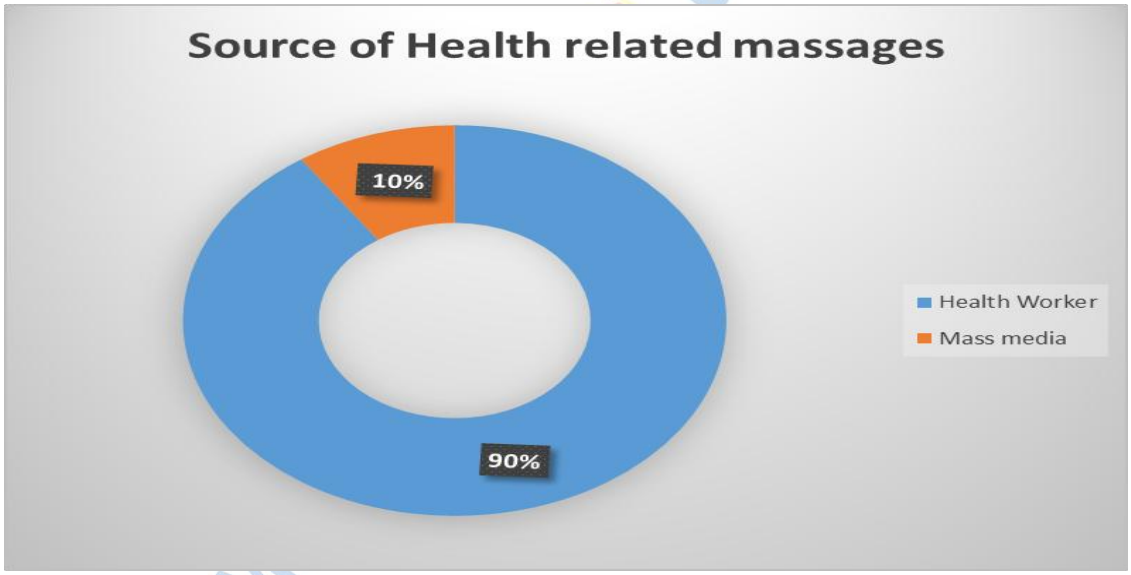


Figure 16; Source of health-related massages.

Early breastfeeding is recommended by the World Health Organization (WHO) during the first hour after the baby's birth. "Colostrum" is a substance that is high in nutrients and antibodies that is present in the first breast milk. It protects babies from disease before manifestations appear. Breastfeeding benefits mothers as well since it reduces the incidence

of postpartum depression and ovarian and breast cancers. Breastfeeding from an early age enhances the bond between a woman and her child and boosts milk production. Because of this, throughout the first six months of a baby's life, the World Health Organization recommends mothers should breastfeed exclusively for six months and to two years and beyond, supplementing with other foods from six months.

There is a higher chance of introducing pre-lacteal feeds—that is, offering any food or fluid other than breast milk before initiating breastfeeding. If suckling is started later than the first hour after delivery. Delaying the start of breastfeeding also reduces the chance of giving the baby the first milk, colostrum, depriving the baby of the antibodies and immune globulin it contains and raising the risk of negative consequences, such as infection and sepsis, in the future.

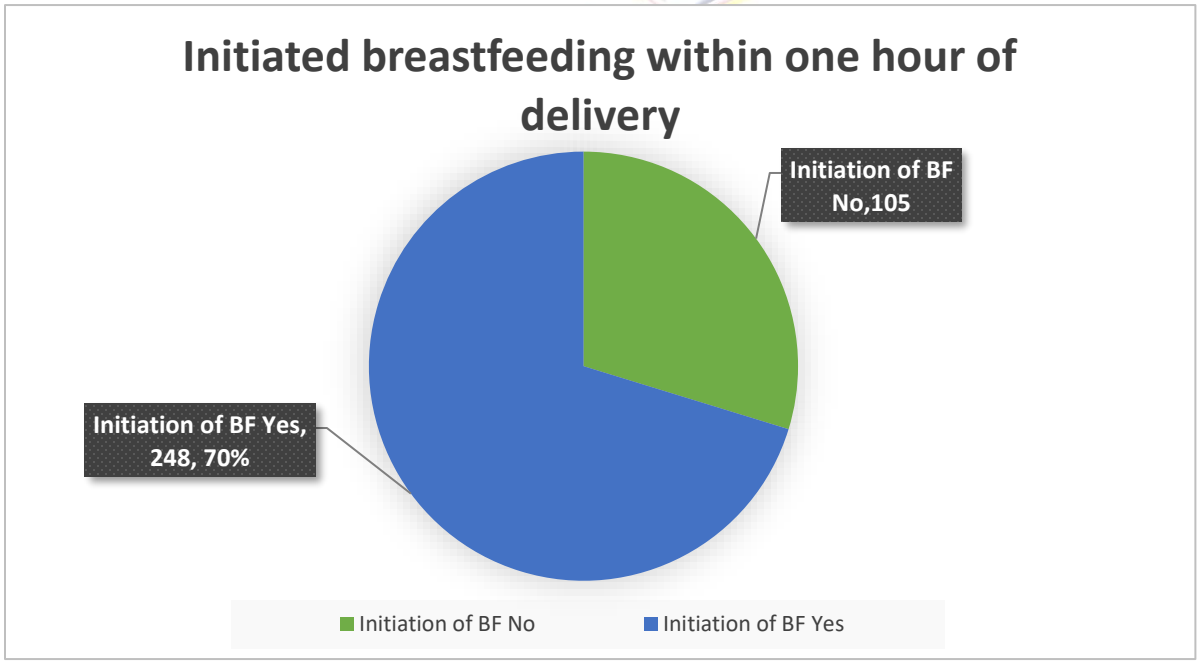


Figure 17: Early Initiation of Breastfeeding

The initiation of breastfeeding among the studied population shows that 70% of mothers initiated breastfeeding within the first hour of delivery. In comparison, the 2020 Somali Health and Demographic Survey found that 60% of mothers in Somalia initiated breastfeeding within the first hour of birth. Further analysis of the 30% who did not initiate breastfeeding within the first hour revealed several barriers. According to the responses, 40% of mothers believed that there was no milk available immediately after delivery, while 26% believed that colostrum was not beneficial. Additionally, 15% cited the baby's illness as a reason for delayed initiation, 12% reported that the mother was unwell, and 7% attributed the delay to other factors. Delayed breastfeeding initiation was particularly prevalent among mothers who had cesarean section births.

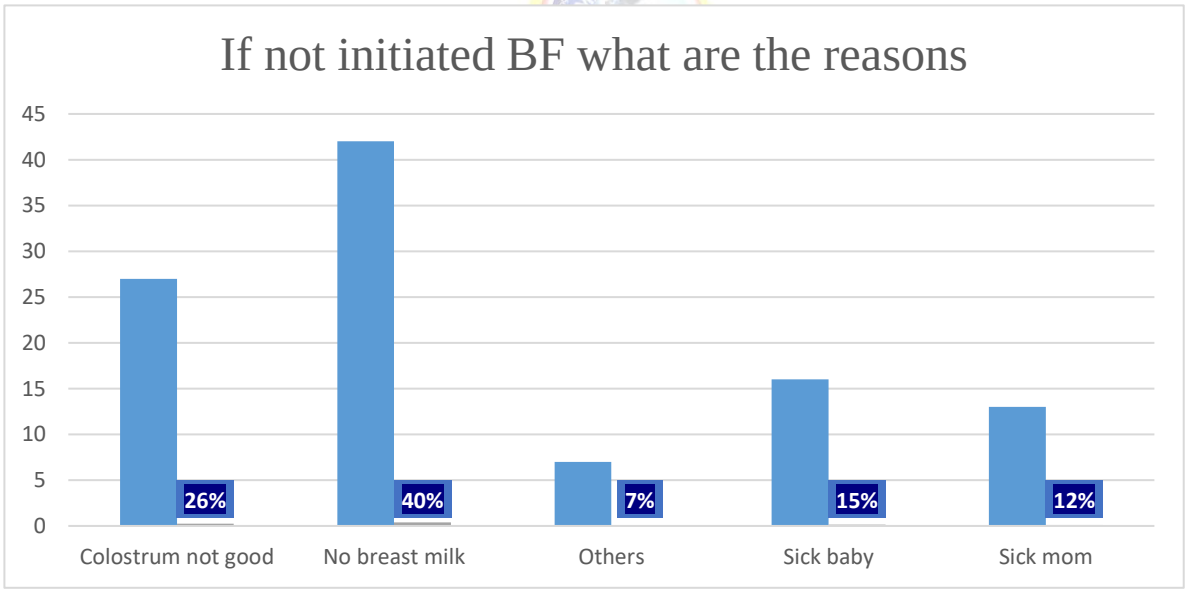


Figure 18; Practice Assessment of Exclusive Breastfeeding.

4.3.7. Factors Hindering Mothers from Exclusive Breastfeeding and Early Initiation

Even though it is widely known that optimal infant feeding practices are important for normal child health, survival, and growth, additional research has revealed that socioeconomic

factors are also part of the barriers. Exclusive breastfeeding and early initiation of breastfeeding are crucial for the health and well-being of both infants and mothers. Despite the well-documented benefits, many mothers face barriers that hinder their ability to practice exclusive breastfeeding and initiate breastfeeding early. Understanding these barriers is essential for developing effective interventions to support breastfeeding practices. This comprehensive summary explores the factors that hinder exclusive breastfeeding and early initiation, categorized into various domains including healthcare system issues, individual and societal challenges, and broader systemic factors.

The primary factors linked to the decrease in exclusive breastfeeding during the first six months of life are the mother's age, occupation, education level, and ignorance of the advantages of breast milk and breastfeeding techniques. Other significant factors include the location and mode of delivery. Additional obstacles to initiating breastfeeding included: breast abnormalities such as retracted or inverted nipples; complications related to obstetrics and newborns requiring specialized care; cultural customs such as giving pre-lacteals; and ignorance of the benefits of colostrum and proper breastfeeding technique.

The study established that 65% of mothers in Wadajir district who visited the health facility during study period was practicing exclusive breastfeeding for the first six months. When compared to the SDHS 2020, which found that 34% of Somali mothers exclusively breastfeed their children, the rate is higher. The study shows that as children get older, the proportion of exclusively breastfed children declines. Exclusive breastfeeding is almost common during the first month of life but becomes less common as the child gets older.

There hasn't been much progress in early breastfeeding initiation despite improvements in other breastfeeding practices. It is projected that the rate of early or timely breastfeeding start increased by only 14% globally, from 32% in 2000 to 46% in 2017. Studies from a number

of countries, including Nigeria, Sri Lanka, Nepal, Ethiopia, Indonesia, Malawi, and Uganda, have shown that the location, mode, and skill level of the attendant present at birth are important determinants of early (or timely) commencement of breastfeeding.

Most evidence suggests that women giving birth in hospitals in low- and middle-income countries are more likely to initiate breastfeeding earlier. The results, meanwhile, do not apply to every hospital delivery. Research from Nigeria, Ethiopia, and Uganda shows that compared to mothers who gave birth vaginally, those who had a caesarean section at a medical facility were far more likely to put off starting to breastfeed after the first hour of the baby's life. Understanding the elements that contribute to delayed breastfeeding initiation in similar environments may aid in determining modifiable risk factors and promote improvements in early infant feeding practices.

Breastfeeding techniques, positioning and attachment to the breast, skin to skin contact was a barrier to mothers, of the 105 mothers who did not initiate breastfeeding with in the first hour 51% of them did not understand what skin to skin is and what other BF techniques are important, which hinders EBF practices, but 88% of them were doing breastfeeding during study period, and 12% did not continue breastfeeding soon after delivery. Again, of the 88% to understand further EBF 47% of them are doing EBF while 53% are doing mixed feeding including breastfeeding.

To further deep dive of why mothers can, t exercise EBF for the first six months had a different issue, which the major is mothers' belief that there is no enough breastmilk that satisfies the baby and, that the baby can, live without water, especially in hot climate areas, and children need always water is another belief that most of mothers have to give water plus breastfeeding, considering that the breastmilk is water almost 80%.

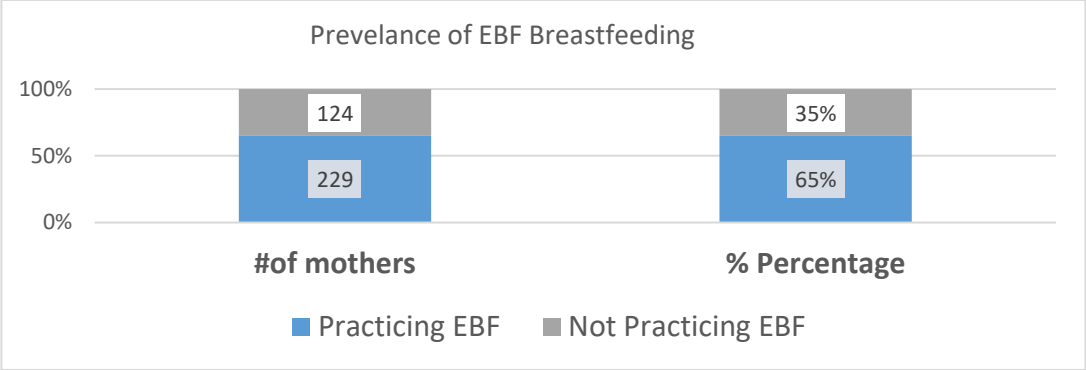


Figure 19; Prevalence of Exclusive Breastfeeding Practice

To measure the prevalence of exclusive breastfeeding (EBF), we employed a structured questionnaire aligned with the Infant and Young Child Feeding (IYCF) indicators. The assessment was based on a 24-hour recall method, capturing feeding practices for the preceding day and night. Mothers were asked, "In the past 24 hours, has your child received any liquids or foods other than breast milk?"

This method provided a robust estimate of EBF prevalence by focusing on recent feeding practices, minimizing recall bias, and ensuring alignment with global EBF measurement standards. The 24-hour recall captures whether the infant was exclusively breastfed—receiving no other liquids (including water) or solids, except for oral rehydration solutions, drops, or syrups such as vitamins, minerals, or medicines.

The data collected using this approach was analyzed to determine the proportion of infants aged 0–6 months who were exclusively breastfed within the defined period.

4.3.8 Mothers Perception of EBF

To measure mothers' perceptions of exclusive breastfeeding (EBF), a robust questionnaire was designed to evaluate key areas such as knowledge (definition, benefits, duration) and perceived barriers. The tool combined both quantitative closed-ended questions and qualitative open-ended prompts, enabling a comprehensive analysis. Topics explored included mothers' understanding of EBF, their beliefs regarding the sufficiency of breastmilk, and the challenges they encounter in practicing EBF. This approach provided a detailed and insightful exploration of maternal perceptions, offering a clear understanding of the factors influencing EBF practices.

The perception of exclusive breastfeeding (EBF) among mothers plays a crucial role in determining whether they choose to exclusively breastfeed and sustain it. Understanding these perceptions helps in identifying barriers and motivators related to breastfeeding practices. Mothers' perceptions of exclusive breastfeeding are influenced by a complex interplay of factors, including knowledge and awareness, personal and family beliefs, socioeconomic factors, health system factors, personal experiences, and media influences. Addressing these factors through education, support, policy changes, and counteracting negative influences can improve mothers' perceptions of EBF and increase the rates of successful exclusive breastfeeding. By creating supportive environments and providing comprehensive resource

Table 5; Mothers' Perception of EBF

Exclusive Breastfeeding - EBF	# of Mothers	%
Money to buy formula feed	6	10%
Water given because of thirst	16	27%
There is enough Breastmilk	37	63%
Knowledge and benefits of BF	45	44%
Initiation of Breastfeeding		
Colostrum is not good	27	26%
The baby is sick	16	15%
The mothers is sick	13	12%
No Breastmilk	42	40%
Skin to skin	54	51%

Both initiation and EBF have got the major concern of no enough breastmilk, while knowledge of the benefits of breastfeeding and breastfeeding techniques also plays a big role of the barriers and family support. Mothers who had support from their husbands or relatives were 6-49 times more likely to successfully breastfeed exclusively for each of the six months, compared to mothers who received no support at all. Lack of support from the spouse and family reduced the success of exclusive breastfeeding by up to 73% in the first month, 79% in the second, 72% in the third, 87% in the fourth, 90% in the fifth, and 97% in the sixth. (Dwinanda et al., 2018). The belief that there is not enough breast milk is a common concern among breastfeeding mothers. This perception can significantly impact the decision to initiate or continue breastfeeding and can influence a mother's overall breastfeeding experience. Understanding the roots of this belief is important. Many mothers may not have accurate information about how milk supply works. They may not understand that milk production is a dynamic process regulated by supply and demand, meaning that frequent

breastfeeding and/or pumping stimulates increased milk production. If mothers do not receive sufficient education about breastfeeding during pregnancy, they may lack the confidence and knowledge to manage breastfeeding challenges effectively.

New mothers may worry about milk supply if their baby feeds frequently or seems unsatisfied after feeding. However, frequent feeding is often a normal behavior that helps to increase and maintain milk supply. Mothers may misinterpret signs such as a lack of visibly full breasts or a reduction in milk flow as indicators of insufficient milk. It's important to understand that milk supply can vary and that these signs do not always reflect actual milk volume.

Exposure to formula advertising and social media posts that highlight formula feeding can contribute to the perception that breast milk is not sufficient or that formula feeding is a more reliable option. The belief in insufficient milk often leads to premature cessation of breastfeeding. Mothers who doubt their milk supply may introduce formula too early or stop breastfeeding altogether.

4.3.9. Bottle Feeding and Influence from Immediate Family Members

The length of exclusive breastfeeding may be shortened if an infant uses a bottle early in life because the first few days of life are so crucial. Failure to breastfeed exclusively was also linked to bottle use during the first week of life. Bottle usage can lead to nipple confusion and indolence since the mother's nipple and the bottle nipple differ in form and contour. Bottle feeding, whether with formula or expressed breast milk, is a common infant feeding method. The choice between bottle feeding and breastfeeding is often influenced by multiple factors, including the opinions and influence of immediate family members. This summary explores the impact of immediate family members on the decision to bottle feed, the factors involved, and the potential consequences for both mothers and infants.

The influence of grandmother or traditional midwife is also affecting exclusive breastfeeding, either the maternal or paternal mother plays a significant role in pregnancy and child rearing decision-making. Mothers are more likely to initiate breastfeeding if their grandmothers' attitudes toward or experiences with breastfeeding are favorable. A negative opinion, on the other hand, has the potential to reduce the likelihood of breastfeeding. Positive Reinforcement Family members who provide encouragement and support for bottle feeding can positively influence a mother's decision. Supportive comments and practical help, such as preparing bottles and feeding, can make bottle feeding more manageable for the mother. Challenges such as latching difficulties, low milk supply, or painful breastfeeding experiences can lead mothers to choose bottle feeding. Family members may encourage this choice if they perceive it as a solution to these problems. Some family members may have strong preferences for formula feeding based on their own experiences or beliefs. This preference can impact the mother's decision, especially if she values the opinions of her family members.

Ensuring that family members are well-informed about the benefits of breastfeeding and the challenges of bottle feeding can help them offer supportive and informed advice. Educational programs and resources can address misconceptions and promote positive attitudes towards breastfeeding. Fostering open communication between the mother and her family members can help address concerns and preferences. Discussing feeding choices and preferences openly can lead to better support and understanding.

The influence of immediate family members on the decision to bottle feed is significant and multifaceted. Family members can impact feeding choices through support, pressure, knowledge, and emotional factors. Understanding these influences and addressing them through education, support, and policy initiatives can help mothers make informed and

confident decisions about infant feeding. By creating a supportive environment and fostering positive attitudes towards breastfeeding, we can improve feeding practices and promote better health outcomes for both mothers and infants.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This section provides the summary conclusion and recommendations of the study.

5.2 Summary

The primary objective of this study was to assess the determinants of exclusive breastfeeding (EBF) and identify the factors influencing it among mothers with infants under six months old in the Wadajir district of the Banadir region, Somalia. The findings showed that 65% of the mothers exclusively breastfed their infants. The study utilized a descriptive cross-sectional design with a sample size of 353 participants. Data was collected through a questionnaire and analyzed using SPSS. The results revealed that various factors hindered the practice of exclusive breastfeeding.

This study assessed the prevalence and determinants of exclusive breastfeeding (EBF) among mothers with infants under six months in Wadajir District, Banadir Region, Somalia. The findings revealed that 65% of mothers practiced EBF, influenced by factors such as maternal education, antenatal care (ANC) attendance, cultural beliefs, and social influences. Higher maternal education levels were associated with better knowledge and adherence to EBF, with 73% of educated mothers correctly identifying the recommended duration of 5–6 months. ANC visits played a crucial role, as 87% of mothers received health and nutrition messages, mainly from health workers (90%), which positively impacted EBF. Skin-to-skin contact was more common among housewives (73%) than employed mothers (68%), reflecting work-related constraints. Despite a high breastfeeding initiation rate (70% within the first hour of birth), barriers such as perceived lack of milk (40%), misconceptions about colostrum (26%), and maternal or infant health issues hindered early breastfeeding. Cultural beliefs

discouraged breastfeeding during pregnancy, leading to early cessation among multiparous women, with 58% having 1–5 children, 39% having 6–10, and 3% having more than 10. Social factors, including family influence, early bottle use, and infant weight concerns, further impacted EBF.

5.3 Conclusion

This study highlights the critical role of maternal education, antenatal care, and cultural beliefs in exclusive breastfeeding (EBF) practices. While 65% of mothers practiced EBF, misconceptions about milk production, colostrum, and breastfeeding during pregnancy hindered adherence. Health workers played a key role in promoting EBF, yet social influences, family pressures, and maternal employment posed challenges. Strengthening breastfeeding education, addressing cultural barriers, and enhancing family support are essential to improving EBF rates. Targeted interventions focusing on awareness, healthcare access, and social support systems can help sustain optimal breastfeeding practices, ultimately improving infant health and reducing child morbidity and mortality.

5.4 Recommendation

5.4.1 Recommendation for practice

All mothers, regardless of their age, marital status, education level, or employment status, should be encouraged to exclusively breastfeed their infants. To achieve this, it is crucial to collaborate with local healthcare providers, community leaders, and non-governmental organizations to launch targeted awareness campaigns focused on exclusive breastfeeding (EBF). These campaigns should be culturally sensitive and specifically address the unique challenges faced by mothers in the Wadajir District. The aim is to dispel common myths and misconceptions about breastfeeding, emphasize its importance for infant health, and

highlight the benefits of exclusive breastfeeding. Offering practical advice to mothers and addressing misunderstandings will be key components of these awareness programs.

Nutrition education is desperately needed to help mothers understand the importance of breastfeeding and to continue breastfeeding their child as frequently as they feel like or on demand to sustain a suitable amount of breast milk supply. The prenatal and postnatal clinics at the medical facilities should handle this. Additionally, mothers who are returning to work or who have concerns that their milk supply is insufficient need counseling. Mothers should be informed about the definition of exclusive breastfeeding, the time frame that is advised, and the health advantages it offers to both the mother and the child.

Ministry of health authority to explore offering training programs for healthcare providers and community health workers focusing comprehensive knowledge about EBF benefits, breastfeeding techniques, and strategies for addressing common breastfeeding difficulties. Educating and encouraging mothers is one strategy to reduce this disruption to breastfeeding. Numerous studies demonstrate that educating women about breastfeeding improves the likelihood that they will successfully breastfeed.

The data that we found in this study will be an asset for planning and will serve as fact-finding of EBF for policy and strategy formulation.

5.4.2 Recommendation for Further Research

To build on this descriptive study, qualitative research is necessary. For instance, studies should investigate whether breast milk sufficiently meets an infant's nutritional needs up to six months of age. Additionally, it is hoped that future research will explore strategies to overcome the various barriers to exclusive breastfeeding in this region. This deeper level of

research will provide valuable insights and practical solutions to support mothers in exclusively breastfeeding their infants.

References

Abdulahi, M., Fretheim, A., Argaw, A., & Magnus, J. H. (2021). Breastfeeding education and support to improve early initiation and exclusive breastfeeding practices and infant growth: A cluster randomized controlled trial from a rural ethiopian setting. *Nutrients*, *13*(4), 1204. https://doi.org/10.3390/NU13041204/S1

Acharya, P., & Khanal, V. (2015). The effect of mother's educational status on early initiation of breastfeeding: Further analysis of three consecutive Nepal Demographic and Health Surveys Global health. *BMC Public Health*, *15*(1), 1–12. https://doi.org/10.1186/S12889-015-2405-Y/TABLES/2

Adugna, B., Tadele, H., Reta, F., & Berhan, Y. (2017). Determinants of exclusive breastfeeding in infants less than six months of age in Hawassa, an urban setting, Ethiopia. *International Breastfeeding Journal*, *12*(1), 1–9. https://doi.org/10.1186/s13006-017-0137-6

Agho, K. E., Ezeh, O. K., Ghimire, P. R., Uchechukwu, O. L., Stevens, G. J., Tannous, W. K., Fleming, C., & Ogbo, F. A. (2019). Exclusive breastfeeding rates and associated factors in 13 "economic community of West African states" (ECOWAS) countries. Nutrients, 11(12). https://doi.org/10.3390/nu11123007

Agusningtyas, N. H., Lanti, Y., Dewi, R., & Murti, B. (2023). Effect of Antenatal Care and Postnatal Care on Exclusive Breastfeeding Practice: Meta Analysis. *Journal of Maternal and Child Health*, *8*(6), 672–681. https://doi.org/10.26911/THEJMCH.2023.08.06.01

Ahishakiye, J., Bouwman, L., Brouwer, I. D., Vaandrager, L., & Koelen, M. (2020). Prenatal infant feeding intentions and actual feeding practices during the first six months postpartum in rural Rwanda: A qualitative, longitudinal cohort study. *International Breastfeeding Journal*, *15*(1). https://doi.org/10.1186/S13006-020-00275-Y

Ahmed, R., Ejeta Chibsa, S., Hussen, M. A., Bayisa, K., Tefera Kefeni, B., Gezimu, W., & Bidira, K. (2024). Undernutrition among exclusive breastfeeding mothers and its associated factors in Southwest Ethiopia: A community-based study. *Women's Health*, *20*. https://doi.org/10.1177/17455057241231478/ASSET/IMAGES/LARGE/10.1177_17455057241231478-FIG2.JPEG

Arero, G. (2022). Undernutrition and associated factors among pregnant women in East Borena Zone, Liban District, Oromia regional state, Ethiopia. *Frontiers in Nutrition*, *9*, 1008701. https://doi.org/10.3389/FNUT.2022.1008701/BIBTEX

Asemahagn, M. A. (2016). Determinants of exclusive breastfeeding practices among mothers in azezo district, northwest Ethiopia. International Breastfeeding Journal, 11(1), 22. https://doi.org/10.1186/s13006-016-0081-x

Asare, B. Y. A., Preko, J. V., Baafi, D., & Dwumfour-Asare, B. (2018). Breastfeeding practices and determinants of exclusive breastfeeding in a cross-sectional study at a child welfare clinic in Tema Manhean, Ghana. *International Breastfeeding Journal*, *13*(1), 1–9. https://doi.org/10.1186/S13006-018-0156-Y/TABLES/4

Awoke, S., & Mulatu, B. (2021). Determinants of exclusive breastfeeding practice among mothers in Sheka Zone, Southwest Ethiopia: A cross-sectional study. Public Health in Practice, 2(July 2020), 100–108. https://doi.org/10.1016/j.puhip.2021.100108

Bbaale, E. (2014). Determinants of early initiation, exclusiveness, and duration of breastfeeding in Uganda. Journal of Health, Population and Nutrition, 32(2), 249–260.

Bedford, R., Piccinini-Vallis, H., & Woolcott, C. (2022). The relationship between skin-to-skin contact and rates of exclusive breastfeeding at four months among a group of mothers in Nova Scotia: a retrospective cohort study. *Canadian Journal of Public Health = Revue Canadienne de Sante Publique*, *113*(4), 589–597. https://doi.org/10.17269/S41997-022-00627-7

Behzadifar, M., Saki, M., Behzadifar, M., Mardani, M., Yari, F., Ebrahimzadeh, F., Majidi Mehr, H., Abdi Bastami, S., & Bragazzi, N. L. (2019). Prevalence of exclusive breastfeeding practice in the first six months of life and its determinants in Iran: A systematic review and meta-analysis. *BMC Pediatrics*, *19*(1), 1–10. https://doi.org/10.1186/S12887-019-1776-0/FIGURES/3

Bhanderi, D., Pandya, Y., & Sharma, D. (2019). Barriers to exclusive breastfeeding in rural community of central Gujarat, India. Journal of Family Medicine and Primary Care, 8(1), 54. https://doi.org/10.4103/jfmpc.jfmpc_329_18

Bhattacharjee, N. V., Schaeffer, L. E., Marczak, L. B., Ross, J. M., Swartz, S. J., Albright, J., Gardner, W. M., Shields, C., Sligar, A., Schipp, M. F., Pickering, B. V., Henry, N. J., Johnson, K. B., Louie, C., Cork, M. A., Steuben, K. M., Lazzar-Atwood, A., Lu, D., Kinyoki, D. K., … Hay, S. I. (2019). Mapping exclusive breastfeeding in Africa between 2000 and 2017. *Nature Medicine*, *25*(8), 1205–1212. https://doi.org/10.1038/S41591-019-0525-0

Chakona, G. (2020). Social circumstances and cultural beliefs influence maternal nutrition, breastfeeding and child feeding practices in South Africa. *Nutrition Journal*, *19*(1). https://doi.org/10.1186/S12937-020-00566-4

Damey, M. A. (2020). KNOWLEDGE AND ATTITUDE ON ULTILAZATION POSTNATAL CARE SERVICES IN WADAJIR DISTRICT, MOGADISHU - SOMALIA SUBMITTED BY. *Moha Adan Damey*.

Damey, M. A. (2020). KNOWLEDGE AND ATTITUDE ON ULTILAZATION POSTNATAL CARE SERVICES IN WADAJIR DISTRICT, MOGADISHU - SOMALIA SUBMITTED BY. Moha Adan Damey. https://www.academia.edu/44781949/KNOWLEDGE_AND_ATTITUDE_ON_ULTI

LAZATION_POSTNATAL_CARE_SERVICES_IN_WADAJIR_DISTRICT_MOGADISHU_SOMALIA_SUBMITTED_BY

Dede, K. S., & Bras, H. (2020). Exclusive breastfeeding patterns in Tanzania: Do individual, household, or community factors matter? International Breastfeeding Journal, 15(1). https://doi.org/10.1186/s13006-020-00279-8

Diji, A. K. A., Bam, V., Asante, E., Lomotey, A. Y., Yeboah, S., & Owusu, H. A. (2017). Challenges and predictors of exclusive breastfeeding among mothers attending the child welfare clinic at a regional hospital in Ghana: A descriptive cross-sectional study. International Breastfeeding Journal, 12(1). https://doi.org/10.1186/s13006-017-0104-2

DNS Government of Somalia. (2020). The Somali Health and Demographic Survey 2020. SHD Survey 2020 Somalia. www.dns.org.so

Dukuzumuremyi, J. P. C., Acheampong, K., Abesig, J., & Luo, J. (2020). Knowledge, attitude, and practice of exclusive breastfeeding among mothers in East Africa: A systematic review. *International Breastfeeding Journal*, *15*(1), 1–17. https://doi.org/10.1186/S13006-020-00313-9/TABLES/5

Egata, G. (2014). Prevalence of Exclusive Breast Feeding and its Predictors Among Infants Aged Six Months in Jimma Town, Southwest Ethiopia, 2013. Journal of Pediatrics & Neonatal Care, 1(3). https://doi.org/10.15406/jpnc.2014.01.00017

Gewa, C. A., & Chepkemboi, J. (2016). Maternal knowledge, outcome expectancies and normative beliefs as determinants of cessation of exclusive breastfeeding: a cross-sectional study in rural Kenya. *BMC Public Health*, *16*(1). https://doi.org/10.1186/S12889-016-2907-2

Hagos, D., & Tadesse, A. W. (2020). Prevalence and factors associated with exclusive breastfeeding among rural mothers of infants less than six months of age in Southern Nations, Nationalities, Peoples (SNNP) and Tigray regions, Ethiopia: A cross-sectional study. International Breastfeeding Journal, 15(1), 1–8. https://doi.org/10.1186/s13006-020-00267-y

Hossain, S., & Mihrshahi, S. (2024). Effect of exclusive breastfeeding and other infant and young child feeding practices on childhood morbidity outcomes: associations for infants 0–6 months in 5 South Asian countries using Demographic and Health Survey data. *International Breastfeeding Journal* , *19*(1), 1–18. https://doi.org/10.1186/S13006-024-00644-X/TABLES/6

Intiful, F. D., Tette, E. M. A., Pobee, R., & Enos, J. Y. (2020). Exclusive breastfeeding: a review of barriers and enhancers to practice in Africa and Asia. Asian Journal of Dietetics, 2(3), 141–152.

Jama, A., Gebreyesus, H., Wubayehu, T., Gebregyorgis, T., Teweldemedhin, M., Berhe, T., & Berhe, N. (2020). Exclusive breastfeeding for the first six months of life and its associated factors among children age 6-24 months in Burao district, Somaliland. International Breastfeeding Journal, 15(1), 1–8. https://doi.org/10.1186/s13006-020-0252-7

Jebena, D. D., & Tenagashaw, M. W. (2022). Breastfeeding practice and factors associated with exclusive breastfeeding among mothers in Horro District, Ethiopia: A community-based cross-sectional study. *PLOS ONE*, *17*(4), e0267269. https://doi.org/10.1371/JOURNAL.PONE.0267269

Karimi, F. Z., Sadeghi, R., Maleki-Saghooni, N., & Khadivzadeh, T. (2019). The effect of mother-infant skin to skin contact on success and duration of first breastfeeding: A systematic review and meta-analysis. *Taiwanese Journal of Obstetrics and Gynecology*, *58*(1), 1–9. https://doi.org/10.1016/J.TJOG.2018.11.002

Khasawneh, W., & Khasawneh, A. A. (2017). Predictors and barriers to breastfeeding in North of Jordan: Could we do better? International Breastfeeding Journal, 12(1), 1–7. https://doi.org/10.1186/s13006-017-0140-y

Kundu, R. N., Hossain, G., Haque, A., Mahumud, R. A., Pal, M., & Bharati, P. (2024). Burden of undernutrition among under-five Bengali children and its determinants: Findings from Demographic and Health Surveys of Bangladesh and India. *PLOS ONE*, *19*(4), e0301808. https://doi.org/10.1371/JOURNAL.PONE.0301808

Machila, C. M., Karonjo, J., Mogere, D., & Kariuki, P. (2021). Level of awareness of the benefits, socio-demographic and cultural factors influencing exclusive breastfeeding among mothers attending MCH clinic in Tudor sub county hospital. International Journal Of Community Medicine And Public Health, 8(5), 2150. https://doi.org/10.18203/2394-6040.ijcmph20211731

Mahdi, A. Y., Nzioki, J. M., & Kubende, P. (2021). Prevalence, Level of Awareness and Socio-Demographic Predictors of Exclusive Breastfeeding among Women of Reproductive Age in Waberi District, Mogadishu, Somalia. *African Journal of Health Sciences*, *33*(5), 110–117.

Makwela, M. S., Mashaba, R. G., Ntimana, C. B., Seakamela, K. P., & Maimela, E. (2024). Barriers and enablers to exclusive breastfeeding by mothers in Polokwane, South Africa. *Frontiers in Global Women's Health*, *5*, 1209784. https://doi.org/10.3389/FGWH.2024.1209784/BIBTEX

Manyeh, A. K., Amu, A., Akpakli, D. E., Williams, J. E., & Gyapong, M. (2020). Estimating the rate and determinants of exclusive breastfeeding practices among rural mothers in Southern Ghana. *International Breastfeeding Journal*, *15*(1), 1V. https://doi.org/10.1186/S13006-020-0253-6/TABLES/2

Mekebo, G. G., Argawu, A. S., Likassa, H. T., Ayele, W., Wake, S. K., Bedada, D., Hailu, B., Senbeto, T., Bedane, K., Lulu, K., Daraje, S., Lemesa, R., Aga, G., Alemayehu, E.,

Kefale, B., Bechera, T., Tadesse, G., Galdassa, A., Olani, J., … Diriba, G. (2022). Factors influencing exclusive breastfeeding practice among under-six months infants in Ethiopia. *BMC Pregnancy and Childbirth*, *22*(1), 1–10. https://doi.org/10.1186/S12884-022-04955-X/TABLES/3

Mgongo, M., Mosha, M. V., Uriyo, J. G., Msuya, S. E., & Stray-Pedersen, B. (2013). Prevalence and predictors of exclusive breastfeeding among women in Kilimanjaro region, Northern Tanzania: A population based cross-sectional study. *International Breastfeeding Journal*, *8*(1), 1–8. https://doi.org/10.1186/1746-4358-8-12

Mihrshahi, S., Kabir, I., Roy, S. K., Agho, K. E., Senarath, U., Dibley, M. J., Patel, A., Badhoniya, N., Khadse, S., Pandey, S., Tiwari, K., Godakandage, S. S. P., Jayawickrama, H., Hazir, T., & Akram, D. S. (2010). Determinants of infant and young child feeding practices in Bangladesh: secondary data analysis of demographic and health survey 2004. *Food Nutr Bull*, *31*(2), 295–313. https://doi.org/10.1177/156482651003100220

Miikkulainen, A., Abdirahman Mohamud, I., Aqazouz, M., Abdullahi Suleiman, B., Sheikh Mohamud, O., Ahmed Mohamed, A., & Rossi, R. (2023). Antenatal care utilization and its associated factors in Somalia: a cross-sectional study. *BMC Pregnancy and Childbirth*, *23*(1), 1–17. https://doi.org/10.1186/S12884-023-05871-4/TABLES/7

Mitsunaga, A., & Yamauchi, T. (2020). Evaluation of the nutritional status of rural children living in Zambia. *Journal of Physiological Anthropology*, *39*(1). https://doi.org/10.1186/S40101-020-00244-8

Mogre, V., Dery, M., & Gaa, P. K. (2016). Knowledge, attitudes and determinants of exclusive breastfeeding practice among Ghanaian rural lactating mothers. *International Breastfeeding Journal*, *11*(1), 1–8. https://doi.org/10.1186/S13006-016-0071-Z/TABLES/5

Mohamed, M. J., Ochola, S., & Owino, V. O. (2020). A Qualitative Exploration of the Determinants of Exclusive Breastfeeding (EBF) Practices in Wajir County, Kenya. *International Breastfeeding Journal*, *15*(1). https://doi.org/10.1186/S13006-020-00284-X

Mundagowa, P. T., Chadambuka, E. M., Chimberengwa, P. T., & Mukora-Mutseyekwa, F. (2019). Determinants of exclusive breastfeeding among mothers of infants aged 6 to 12 months in Gwanda District, Zimbabwe. *International Breastfeeding Journal*, *14*(1). https://doi.org/10.1186/S13006-019-0225-X

Nabunya, P., Mubeezi, R., & Awor, P. (2020). Prevalence of exclusive breastfeeding among mothers in the informal sector, Kampala Uganda. *PLoS ONE*, *15*(9). https://doi.org/10.1371/JOURNAL.PONE.0239062

Nguyen, N. T., Do, H. T., & Pham, N. T. Van. (2021). Barriers to exclusive breastfeeding: A cross-sectional study among mothers in Ho Chi Minh City, Vietnam. *Belitung Nursing Journal*, *7*(3), 171. https://doi.org/10.33546/BNJ.1382

North, K., Gao, M., Allen, G., & Lee, A. C. (2022). Breastfeeding in a Global Context: Epidemiology, Impact, and Future Directions. Clinical Therapeutics, 44(2), 228–244. https://doi.org/10.1016/j.clinthera.2021.11.017

Olasinde, Y. T., Ibrahim, O. R., Idowu, A., Odeyemi, A. O., Olasinde, A., Agelebe, E., Ogunlaja, O. A., & Gbadero, D. A. (2021). Determinants of Exclusive Breastfeeding Practices Among Mothers of Infants Less Than Six Months Attending an Immunization Clinic in Southwestern Nigeria. *Cureus*, *13*(6). https://doi.org/10.7759/CUREUS.15975

Ratnayake, H. E., & Rowel, D. (2018). Prevalence of exclusive breastfeeding and barriers for its continuation up to six months in Kandy district, Sri Lanka. International Breastfeeding Journal, 13(1), 1–8. https://doi.org/10.1186/s13006-018-0180-y

Sarfo, M., Aggrey-Korsah, J., Adzigbli, L. A., Atanuriba, G. A., Eshun, G., Adeleye, K., & Aboagye, R. G. (2024). Prevalence of early initiation of breastfeeding and its associated factors among women in Mauritania: evidence from a national survey. *International Breastfeeding Journal*, *19*(1), 69. https://doi.org/10.1186/S13006-024-00669-2/TABLES/2

Setegn, T., Belachew, T., Gerbaba, M., Deribe, K., Deribew, A., & Biadgilign, S. (2012). Factors associated with exclusive breastfeeding practices among mothers in Goba district, south east Ethiopia: A cross-sectional study. International Breastfeeding Journal, 7, 17. https://doi.org/10.1186/1746-4358-7-17

Sonko, A., & Worku, A. (2015). Prevalence and predictors of exclusive breastfeeding for the first six months of life among women in Halaba special woreda, Southern Nations, Nationalities and Peoples' Region/SNNPR/, Ethiopia: A community based cross-sectional study. Archives of Public Health, 73(1), 53. https://doi.org/10.1186/s13690-015-0098-4

Syahri, I. M., Laksono, A. D., Fitria, M., Rohmah, N., Masruroh, M., & Ipa, M. (2024). Exclusive breastfeeding among Indonesian working mothers: does early initiation of breastfeeding matter? *BMC Public Health*, *24*(1), 1–10. https://doi.org/10.1186/S12889-024-18619-2/TABLES/2

Talbert, A., Jones, C., Mataza, C., Berkley, J. A., & Mwangome, M. (2020). Exclusive breastfeeding in first-time mothers in rural Kenya: A longitudinal observational study of feeding patterns in the first six months of life. *International Breastfeeding Journal*, *15*(1), 1–9. https://doi.org/10.1186/S13006-020-00260-5/FIGURES/1

Tegegnework, S. S., Derseh, B. T., Meseret, W. A., Zeru, A. B., Assefa, H. K., Bilchut, A. H., & Ahmed, S. M. (2023). Nutritional Status and Associated Factors Among School Adolescent Girls in North Shoa Zone, Amhara Region, Ethiopia: A Cross-Sectional Study. *Women's Health Reports*, *4*(1), 126–135. https://doi.org/10.1089/WHR.2022.0103/ASSET/IMAGES/LARGE/WHR.2022.0103_FIGURE3.JPEG

Tsegaw, S. A., Dawed, Y. A., & Amsalu, E. T. (2021). Exploring the determinants of exclusive breastfeeding among infants under-six months in Ethiopia using multilevel analysis. *PLoS ONE*, *16*(1), e0245034. https://doi.org/10.1371/JOURNAL.PONE.0245034

UNICEF. (2018). *Breastfeeding*. https://www.unicef.org/reports/breastfeeding

Victora, C. G., Bahl, R., Barros, A. J. D., França, G. V. A., Horton, S., Krasevec, J., Murch, S., Sankar, M. J., Walker, N., Rollins, N. C., Allen, K., Dharmage, S., Lodge, C., Peres, K. G., Bhandari, N., Chowdhury, R., Sinha, B., Taneja, S., Giugliani, E., … Richter, L. (2016). Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect. *Lancet (London, England)*, *387*(10017), 475–490. https://doi.org/10.1016/S0140-6736(15)01024-7

Wako, W. G., Wayessa, Z., & Fikrie, A. (2022). Effects of maternal education on early initiation and exclusive breastfeeding practices in sub-Saharan Africa: a secondary analysis of Demographic and Health Surveys from 2015 to 2019. *BMJ Open*, *12*(3), e054302. https://doi.org/10.1136/BMJOPEN-2021-054302

Wanjohi, M., Griffiths, P., Wekesah, F., Muriuki, P., Muhia, N., Musoke, R. N., Fouts, H. N., Madise, N. J., & Kimani-Murage, E. W. (2017). Sociocultural factors influencing breastfeeding practices in two slums in Nairobi, Kenya. *International Breastfeeding Journal*, *12*(1), 5. https://doi.org/10.1186/S13006-016-0092-7

Wardani, A. F. K., & Utomo, A. I. (2022). Meta-analysis: Relationship between Antenatal Care Visits and Exclusive Breastfeeding. *Journal of Health Promotion and Behavior*, *7*(1), 9–17. https://doi.org/10.26911/THEJHPB.2021.07.01.02

WHO. (2017). *Evidence for Nutrition Actions (eLENA)*. http://www.who.int/elena/titles/exclusive_breastfeeding/en/

Zewdie, A., Taye, T., Kasahun, A. W., & Oumer, A. (2022). Effect of maternal employment on exclusive breastfeeding practice among mothers of infants 6-12 months old in Wolkite town, Ethiopia: a comparative cross-sectional study. *BMC Women's Health*, *22*(1). https://doi.org/10.1186/S12905-022-01816-9

Zong, X., Wu, H., Zhao, M., Magnussen, C. G., & Xi, B. (2021). Global prevalence of WHO infant feeding practices in 57 LMICs in 2010–2018 and time trends since 2000 for 44 LMICs. E Clinical Medicine, 37, 1–9. https://doi.org/10.1016/j.eclinm.2021.100971

APPENDICES

Appendices 1. Consent Form

PREVALENCE AND BARRIERS OF EXCLUSIVE BREASTFEEDING AMONG INFANTS AGED UNDER SIX MONTHS IN WADAJIR DISTRICT, BANADIR REGION- SOMALIA.

Name Of Investigator: Madina Ali Abdirahman Contact: +252 61 5508581

For the first six months of a baby's life, breastfeeding is the most effective method of infant feeding. In the Wadajir district, Banadir area, Somalia, this study aims to ascertain the prevalence and obstacles of exclusive breastfeeding among infants under six months. More advocacy and action are required to raise breastfeeding rates globally as a crucial public health strategy to maximize the health of current and future generations, given the benefits to both mother and newborn and the significant public health benefit. To meet the 2030 targets, rapid advancement is required in almost all regions. Participation in the study is voluntary and does not attract any financial or material gains. All participants will give informed consent by affixing their signatures to the consent form. Questions will be asked as guided by the formulated questionnaire. Discretion of all archives will be preserved. The detective shall be at Wadajir's mother-to-child health center during the study period.

CONSENT

I _____ agree to be a part of this research.

I have been told that the information I provide will be treated with the utmost confidentiality, and I also agree to any further procedures required for the study, as has been outlined to me:

Researcher's signature

Appendices 2. Questionnaire

Infant factors

1. Child Age (months): 0-2 ☐ 3-4 ☐ 5-6 ☐
2. Child gender: Male ☐ Feminine
3. EBF duration in months: 0-2 ☐ 3-4 ☐ 5-6 ☐

Maternal Factors

4. Age: 18-24 ☐ 25-30 ☐ 31-35 ☐ 36-40 ☐ 41-49 ☐
5. Education: none ☐ primary,☐ secondary,☐ tertiary ☐ vocational,☐ others☐
6. Occupation: Housewife ☐ salaried employed ☐ self-employed ☐ student ☐
   Others ☐
7. Number of pregnancies 1- 5 ☐ 6 – 10 ☐ More than 10 ☐

Health-related factors

8. Number of ANC visits: none ☐ 1-2☐ 3-4 ☐ >4 ☐
9. Mode of delivery: SVD ☐ C/S ☐
10. Place of delivery: Hospital ☐ Home ☐ Traditional midwife☐
11. Given Breastfeeding message in pregnancy: Yes, ☐ no ☐
12. If yes, by whom: Friend/relative ☐ health worker☐ Mass-media ☐

Knowledge and Practice assessment

13. Initiated breastfeeding within 1 hour post-delivery Yes ☐ ☐ No

14. If no, reason: Colostrum not good ☐ no breast milk, ☐ Sick mom, ☐ Sick baby ☐ Others ☐

15. Skin-to-skin contact immediately after birth Yes ☐ No ☐ Not sure. ☐

16. Currently breastfeeding: Yes ☐ No. ☐

17. During the day and night, what did you give to your child (Breastmilk only)? ☐ Breastmilk and ☐

18. If no, reason: No milk ☐ water given because of thirst ☐ money to buy formula feed ☐ other ☐

19. For how long after birth should a child be given breast milk alone without giving any other food (0-3) ☐ 0-6 ☐ 6-8 ☐ 8-12 ☐

Appendices 3. Introduction Letter

Mount Kenya University

DIRECTORATE OF GRADUATE STUDIES

MPH/2021/73207

2nd August, 2023

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: MADINA ALI ABDIRAHMAN– REGISTRATION NO. MPH/2021/73207

The purpose of this letter is to introduce the above named student who is pursuing **Master of Public Health** in the department of **Community Health, Epidemiology and Biostatistics** in the school of **Public Health.**

The title of the research is **"Assessment of Prevelance and Determinants of Exclusive Breastfeeding among Mothers with Infants Aged Under Six Months in Wadajir District, Banadir Region, Somalia."** It has been cleared by the University's Ethics Review Committee (Certificate attached) and now has to proceed to the field to collect data between **August, 2023 and October, 2023.**

Any assistance accorded to the student will be highly appreciated.

Thank you.

Mount Kenya University
P. O. Box 342 - 01000, THIKA
Office of the Director
Graduate Studies

Dr. Samuel M. Karenga, Ph.D
Director, Graduate Studies
Enc.

Main Campus, General Kago Road, P.O. Box 342-01000 Thika.
Tel: 020-2878 000, Cell: +254 709 153 000
Email: info@mku.ac.ke, Web: www.mku.ac.ke
Chartered and ISO 9001 : 2015 Certified Institution.
Unlocking Infinite Possibilities

Appendices 4. Research Permit ERC

Mount Kenya University

REF: MKU/ISERC/2910
TO: MADINA ALI ABDIRAHMAN

Date: 02 August 2023

REG: MPH/2021/73207

Dear Sir/Madam,

RE: ASSESSMENT OF PREVELANCE AND DETERMINANTS OF EXCLUSIVE BREASTFEEDING AMONG MOTHERS WITH INFANTS AGED UNDER SIX MONTHS IN WADAJIR DISTRICT, BANADIR REGION- SOMALIA

This is to inform you that **Mount Kenya University** has reviewed and approved your above research proposal. Your application approval number is **1954.** The approval period is **02/08/2023 - 01/08/2024.**

This approval is subject to compliance with the following requirements;

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

Prior to commencing your study, you will be expected to comply with any additional requirements from the relevant authorities in the country where this study will be conducted

Yours sincerely,

The Chairman
Mount Kenya University
Ethics Review Committee
P. O. Box 342 - 0100, Thika

Dr. Alfred Owino, PhD
Chairman, Mount Kenya University ISERC

Main Campus, General Kago Road, P.O. Box 342-01000 Thika.
Tel: 020-2878 000, Cell: +254 709 153 000

Appendices 5. Authorization Letter

BANADIR REGIONAL ADMINISTRATION

MOGADISHU MUNICIPALITY

16.08.2023

Ethical Clearance Request

Title: Assessment of Prevalence and Determinants of Exclusive Breastfeeding Among Mothers with Infants Aged Under Six Months in Wadajir District, Banadir Region, Somalia

Principal Investigator: Madina Ali Abdirahman

Affiliation: MKU Public Health Student MPH/2021/73207

Contact Information: madna11@gmail.com

Purpose of the Study:

The primary objective of this study is to assess the prevalence and determinants of exclusive breastfeeding among mothers with infants aged under six months in Wadajir District, Banadir Region, Somalia. The findings aim to inform public health strategies and interventions to promote exclusive breastfeeding, which is crucial for the health and development of infants.

Background:

Exclusive breastfeeding (EBF) for the first six months of life is recommended by the World Health Organization (WHO) due to its significant health benefits for both infants and mothers. Despite these benefits, EBF rates remain suboptimal in many regions, including Somalia. Understanding the prevalence and factors influencing EBF practices is essential for developing effective public health interventions.

Ethical Considerations:

Risk to Participants: The study poses minimal risk to participants. The primary risk is the potential discomfort of answering personal questions, which will be minimized by ensuring a private and respectful interview process.

Benefits to Participants: While there are no direct benefits to participants, the study's findings may contribute to improved public health strategies and breastfeeding promotion programs in the community.

Informed Consent: Participants will receive comprehensive information about the study and will provide informed consent before participating. Efforts will be made to ensure that participants fully understand the study's purpose and procedures.

Confidentiality: All data will be securely stored and only accessible to the research team. Data will be anonymized to protect participant privacy.

Voluntary Participation: Participation in the study is entirely voluntary. Participants can withdraw from the study at any point without any consequences.

Potential Conflicts of Interest:

The principal investigator and research team have no conflicts of interest to declare.

Conclusion:

We seek ethical clearance to conduct this study, confident that it adheres to the highest ethical standards and respects the rights and welfare of all participants. The study will provide valuable insights into breastfeeding practices and inform future public health initiatives in Wadajir District and beyond.

Attachments:

1.Research Proposal

2. Questionnaire

3. Informed Consent Form

Madina Ali Abdirahman

Signature:

Institutional Approval:

Mr. Abdiaziz Osman Mohamed

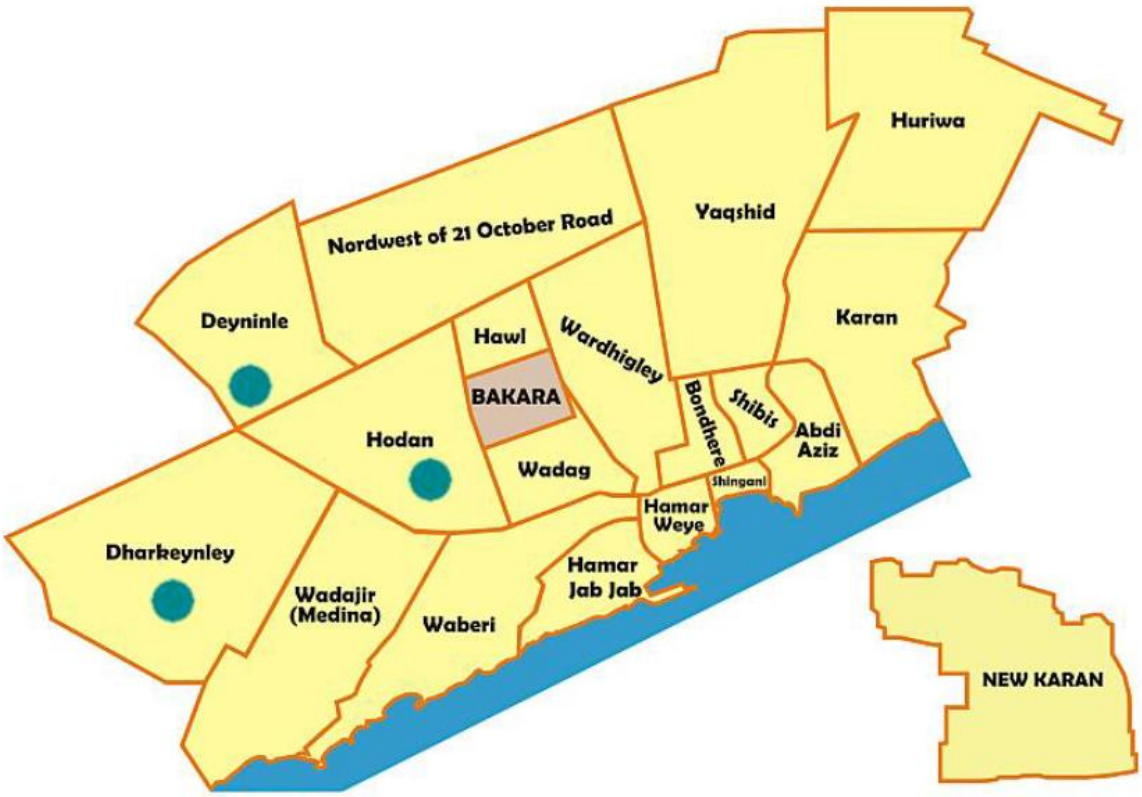
Deputy Mayor of Social Affairs and Awareness

Banadir Regional Administration & Municipality of Mogadishu

Official Email: dmsocial@brra.gov.so

signature:

Appendices 6. Map Of Banadir Region



shows the map of banadir region somalia

Appendices 7. Similarity Index Report

turnitin

Digital Receipt

This receipt acknowledges that Turnitin received your paper. Below you will find the receipt information regarding your submission.

The first page of your submissions is displayed below.

Submission author:	Madina Ali Abdirahman
Assignment title:	PG 2021
Submission title:	Final Thesis Madina- 30042025.docx
File name:	Final_Thesis_Madina-_30042025.docx
File size:	5.1M
Page count:	110
Word count:	3,976
Character count:	145,052
Submission date:	29-May-2025 02:19PM (UTC+0300)
Submission ID:	2260651128

DETERMINANTS OF EXCLUSIVE BREASTFEEDING AMONG MOTHERS WIT
H INFANTS AGED UNDER SIX MONTHS IN WADAJIR DISTRICT, BANADIR
REGION - SOMALIA

MADINA ALI ABDIRAHMAN

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT
S FOR THE AWARD OF MASTER OF PUBLIC HEALTH DEGREE IN INTERNA
TIONAL HEALTH AND DEVELOPMENT OF
MOUNT KENYA UNIVERSITY

APRIL 2025

Final Thesis Madina- 30042025.docx

ORIGINALITY REPORT

7%	7%	3%	2%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	info.submit4journal.com Internet Source	4%
2	Submitted to Mount Kenya University Student Paper	1%
3	Submitted to University of Pecs Student Paper	1%
4	Submitted to Federal University of Technology Student Paper	<1%
5	Submitted to Lira University Student Paper	<1%
6	medcraveonline.com Internet Source	<1%
7	www.researchgate.net Internet Source	<1%
8	discovery.researcher.life Internet Source	<1%
9	www.coursehero.com Internet Source	<1%
10	erepository.uonbi.ac.ke Internet Source	<1%
11	"Public Health and Nutrition", Springer Science and Business Media LLC, 2024 Publication	<1%
12	Jonas Dinwia, Sabina Ampon- Wireko. "Exclusive Breastfeeding Practices among Female Healthcare Workers and Child Welfare Clinic Mothers in the Sissala East Municipality	<1%