BARRIERS AND ENABLERS TO EXCLUSIVE BREASTFEEDING PRACTICES AMONG WOMEN WORKING IN FORMAL AND INFORMAL SECTOR IN NIGERIA: A LITERATURE REVIEW

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A thesis submitted in partial fulfilment of the requirement for the degree of
Master of Science in Public Health (MPH).

By

Christianah Adeola Adeyanju
The thesis [Barriers and enablers to exclusive breastfeeding practices among women working in the formal and informal sectors in Nigeria] is my own work.

Declaration:
Where other people's work has been used (from either a printed or virtual source), this has been carefully acknowledged and referenced in accordance with academic requirements.

Signature 

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Great is thy faithfulness, Oh God my Father; There is no shadow of turning with thee. I appreciate the Almighty God for the grace and strength bestowed upon me to complete this program.

I am deeply grateful to my wonderful and loving crown, Adeyeye, and my children, Erioluwa and Iyinoluwa, for their support and encouragement during my study; I love you all. I appreciate the prayers, support, and encouragement given to me by my parents and siblings. Thank you.

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LIST OF ABBREVIATIONS

ANC	Antenatal Clinic
BFHI	Baby Friendly Hospital Initiatives
BMS	Breast Milk Substitute
EBF	Exclusive Breastfeeding
IYCF	Infant and Young Child Feeding
LGA	Local Government Areas
NDHS	National Demographic Health Survey
SVD	Save Vaginal Delivery
UNICEF	United Nations Children Funds
WHO	World Health Organization

DEFINITION OF TERMS

Women of reproductive age: Women between the age of 15 and 49 years (1)

Formal sector: Employment in formal sectors refers to all types of employment that offer regular pay as salary and wages, where income tax is paid. It includes both private and public organizations. Workers include professionals such as doctors, bankers, civil servants, and public servants, organizations (2)

Informal Sector: The informal economy or sector refers to all economic activities by workers and economic units that are in law or in practice not covered or insufficiently covered by formal arrangements. The status of the employment is an informal job relationship if their employment relationship is, in law or practice, not subject to national labour legislation, income taxation, social protection, or entitlement to certain employment benefits (advance notice of dismissal, severance pay, paid annual or sick leave (2)

Exclusive Breastfeeding: Feeding an infant breast milk for six months without introducing water, infant formula, or other liquids or solids. The exception is the use of vitamins, mineral supplements, or medication prescribed by physicians (3).

ABSTRACT

Introduction: Exclusive breastfeeding (EBF) during the first six months of a baby's life is low among working women in Nigeria. EBF protects infants against infections and diseases and benefits mothers' reproductive health. Working women's challenges and uncondusive workplace may hinder EBF practices.

Objectives: This thesis aimed at identifying barriers and enablers to EBF practice among working women in formal and informal sectors in Nigeria and provide recommendations for future intervention.

Methodology: This study examined existing literature using Boolean operators to search articles and papers from databases. The review uses the Lancet framework of breastfeeding determinants. It focuses on keywords such as "Exclusive breastfeeding, Practices, Barriers, Enablers, and Interventions.", Articles from 2012 is included,

Results: Breastfeeding practices differ between working women in the informal and formal sectors due to barriers such as poor perception of EBF, sociocultural beliefs, and work-related issues. Enablers include family support, marriage, and antenatal visits. Effective interventions in Nigeria include mobile support, mass media campaign, work support, paid maternity leave, and the baby-friendly hospital initiative.

Discussion/conclusion: Ensuring the protection of informal sector workers and addressing work-related matters in the formal sector is crucial. Monitoring these concerns will promote exclusive breastfeeding (EBF) among working women in both sectors. Laws and penalties should be enacted for organizations not providing breastfeeding opportunities. Peer support groups, education, and social mobilization can target formal and informal sectors. Cash transfer can be considered for the informal sector lacking paid maternity leave.

Keywords: Exclusive breastfeeding, Barriers, Working women, Formal and informal, social mobilisation, Intervention

Word count: 11807

INTRODUCTION

Exclusive breastfeeding (EBF), according to the World Health Organisation, is feeding an infant with breast milk only for the first six months without introducing water, infant formula, or other liquids or solids. The exception is the use of vitamins, mineral supplements, or medication prescribed by physicians (3). The importance of breast milk to infants is well known, and it is considered a complete meal with adequate nutrition required for optimum growth of an infant up to six months of age (3).

Effective EBF practices offer numerous advantages to both infants and mothers. Exclusive breastfeeding boosts immunity and protects the child against viral and bacterial infections (4, 5, 6). It reduces the development of non-communicable diseases such as obesity, hypertension, and diabetes later in life (4, 5, 6). Additionally, EBF positively influences children's brain development and high intelligence performance (4, 5, 6). For mothers, exclusive breastfeeding assists in achieving better reproductive health by aiding uterine revolution, serving as a family planning method, helping in shedding weight post-delivery, and preventing the occurrence of some reproductive cancers (5, 6). Based on these advantages of breastfeeding to infants and mothers, the World Health Organization (WHO) recommends that mothers exclusively breastfeed their newborns for the first six months of life and continue breastfeeding with adequate complementary foods for at least two years or beyond (3).

Despite increased awareness of the above benefits, approximately 44% of infants globally are exclusively breastfed as of 2020 (7). It is alarming that the practice remains low, as 56% of the world's infants are not exclusively breastfed. About 820,000 children per year could be saved if breastfeeding practice, including EBF, is improved (8). Effective EBF practices can reduce morbidity and mortality in under-5 children by 13%- 15%, especially in low and middle-income countries, where infant and under-5 mortality rates remain an issue (9).

In Africa, over 95% of infants are breastfed. However, only 37% of infants are exclusively breastfed for six months, which falls short of the 50% rate recommended by the World Health Organization (10, 11). Nigeria, one of the African countries with a low rate of exclusive breastfeeding, has an increased number of women participating in the labour force, engaging in various activities to support household wealth (12, 13). Increased participation has led to

less time for childcare of children under two years which could contribute to varying EBF rates across the country (14, 9).

As a medical doctor in the public health department, overseeing the activities of a Basic health centre where maternal and child health services, family planning, and community outreaches are the main activities, I realized that despite being educated on exclusive breastfeeding (EBF) benefits, working women attending our infant welfare clinic were not practising it. I investigated the cause and discovered that work was a significant hindrance. On getting to KIT, I reflected on this issue and decided to explore the barriers and enablers to EBF among women in Nigeria's formal and informal sectors.

CHAPTER ONE

1.0 BACKGROUND

1.1 Demography, Ethnicity, and Population Distribution

Nigeria is a country in West Africa, with a population of about 223 million as of July 2023. The figure is calculated from the last census conducted in 2006 and an annual population growth rate of 2.4% (15, 16, 17). The population density is 246 per km2 (636 people per m), with a significant portion of younger people. Children under four years comprises approximately 17.2% of the population (17). Due to the high fertility rate, there is a projection for the population to double its current size by 2050 (17). Nigeria has three predominant ethnic groups, namely Hausa, Igbo, and Yoruba, and over 250 sub-ethnic groups with diverse languages, customs, and traditions (18). The country is divided into 36 states, including the federal capital territory (FCT), Abuja, and 744 local government areas within six-geopolitical zones, as illustrated in Figure 1 below North-East, North-West, North-Central, South-East, South-South, and South-West. The official means of communication is the English language. Christianity, Islam, and the Traditional belief are the three widely practice religions (19).

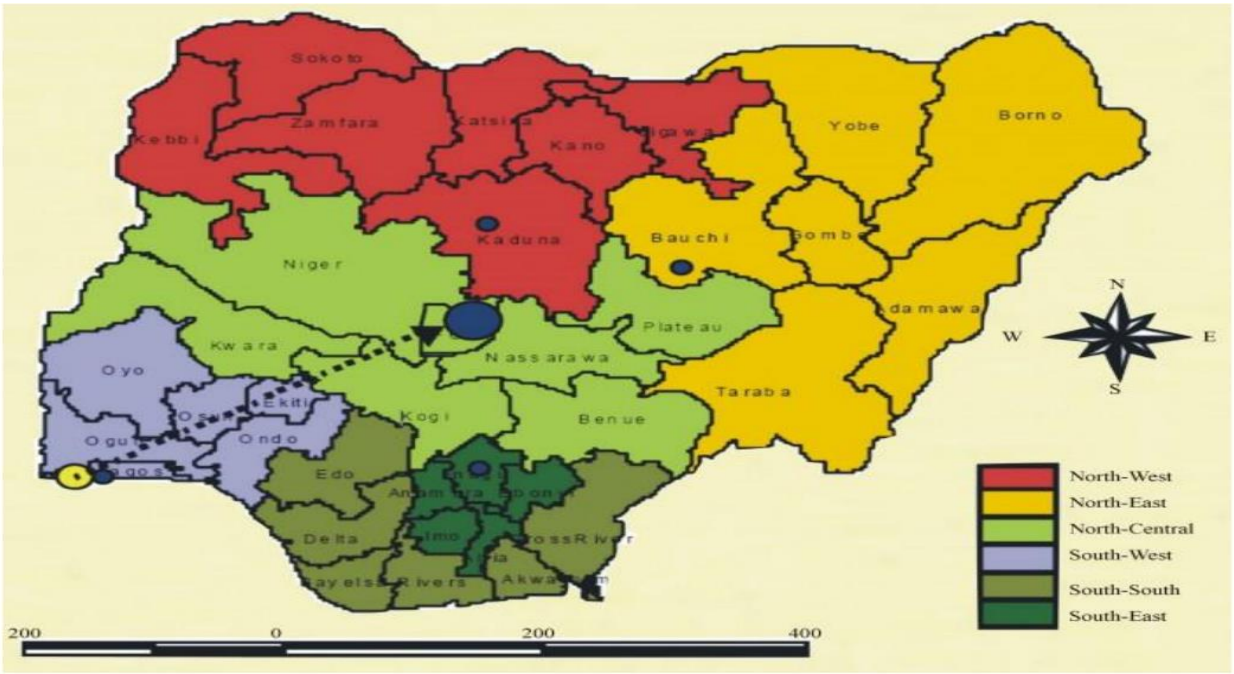

Figure 1. Map of Nigeria showing the six geopolitical zones and states (source: The Trent 2016) (20)

1.2 Socioeconomic Status in Nigeria

Nigeria's economy is weak and depends solely on oil. The drop in oil production and hefty petrol subsidies weakened the macroeconomic situation. Many people are pushed into poverty as the economy deteriorates and inflation rises. With an inflation rate of 22.4% as of May 2023, poverty and unemployment become significant challenges in Nigeria (21, 22). The budget deficit for 2022 is 6.25 trillion naira, or about 3.39% of the gross domestic product (GDP) (23). As a result, the multidimensional poverty index estimates that 63% of the entire population

lives in multidimensional poverty as of 2022, and approximately 4 out of 10 people survive on less than a dollar per day (24). Most impoverished people live in rural areas and urban slums where agricultural practices are the primary source of income. As a result of this larger proportion of working women are fornd in informal sector (2) The country has a tropical climate characterized by rainy and dry seasons, favouring agricultural practices (25). However, the unfavourable climatic events in the northern parts of the country, such as floods and heat stress, negatively impact food production, contributing to undernutrition in the country (21).

1.3 Healthcare System in Nigeria

Formal and informal providers deliver Nigeria's health care system, as shown in Figure 2 below. The formal system follows a 3-tier system, with the federal government providing tertiary care at national institutions such as Federal medical centres and Teaching hospitals. This level is the highest level of referral. The state governments provide secondary care at the state and general hospitals, and local government authorities offer primary care at various health centres (26). Private healthcare systems are also regulated by the government, primarily for-profit. Informal providers include traditional birth attendants and not-for-profit healthcare owned by individuals, groups, and missionaries. Healthcare expenditures are mainly paid out of pocket, impacting other family expenses (27).

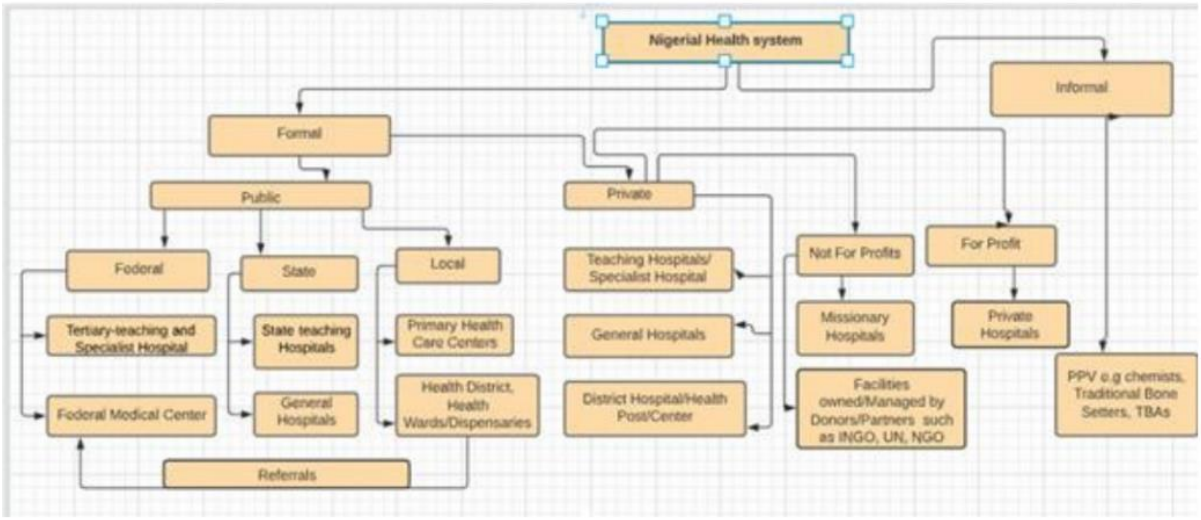

Figure 2: Nigeria's Health System (Health System and Policy Making Assignment)

1.4 Health Situation in Nigeria

Nigeria’s health system faces numerous challenges that hurt its citizens’ well-being. There are insufficient resources (health workers, health facilities, and medical equipment) with inequity distribution between rural and urban areas (28). This is worsened by the brain drain of health practitioners ravaging the country, poor coordination, service fragmentation, and lack of accountability (29, 30). Malnutrition remains one of the causes of death in under-five children, to contribuitingwhich inadequate breastfeeding and feeding practices are factors. The under-5 mortality was 132 deaths per 1,000 live births, according to the 2018 National Demographic Health Survey (NDHS) (31). Neonatal mortality constitutes a more significant part of this under-5 -mortality; this means that 1 in 8 children die before the age of 5 (31), which reflects the state of healthcare service access and delivery in the country. Maternal mortality remains high despite several efforts taken by the government to improve maternal health and reduce mortality (31). Nigeria’s government has failed to fulfil its commitment to the Abuja Declaration 2001, where it agreed to spend 15% of the total budget on health (32). This affects

health financing and the quality of health services provided to the population, thus contributing to the health challenges in the country.

CHAPTER TWO

2.0 PROBLEM OF STATEMENTS, JUSTIFICATION AND OBJECTIVES, AND RESEARCH QUESTION

2.1 Problem Statements

Exclusive breastfeeding for the first six months of life is recommended as one of the approaches in the Global Strategy for Infant and Young Child Feeding (IYCF) by the World Health Organization to improve the nutritional status of children under five (3). The aim of IYCF is to promote nutrition in under-5 and reduce mortality. The other two strategies are early initiation of breastfeeding within one hour of delivery and continuation of breastfeeding for two years (3).

In Nigeria, the 2018 National Demographic Health Survey reported that 97% of children were breastfed at one point. However, only 42% of the babies received breastmilk within one hour of delivery, 29% for up to 6 months, and 28% for two years. This shows that about 71% of children were not exclusively breastfed, and the EBF practices decreased with the number of months (31). Poor exclusive breastfeeding and weaning practices contributed to increased diarrhoea and malnutrition, one of Nigeria's leading causes of death in under-5 children (33). A child not breastfed is twice as likely to die as a child who is breastfed optimally (34). About 10 million avoidable cases of diarrhoea per year were attributable to inadequate and low breastfeeding practices in children under five (35). A 2017 report of a study on the economic cost of not breastfeeding in Nigeria by Alive & Thrive and UNICEF estimated that 103,742 lives could be saved per year in Nigeria if breastfeeding practice is improved. This study also estimated that approximately NGN 6.93 billion ($22 million) is used yearly to treat children with diarrhoea and pneumonia resulting from inadequate breastfeeding practices (35). The exclusive breastfeeding practice rate ranges from 21.3% to 43.9% nationwide, and this variation has been attributed to many factors, such as socioeconomic and sociocultural (31, 36, 37). A clinic-based study was conducted in the southwestern region among women with infants under six months. The study found that non-exclusive breastfeeding within the first month of life is attributed to cultural beliefs about colostrum and the myth about mil (38). Also, maternal factors such as medical conditions that affect maternal health or milk production, difficulty combining breastfeeding with other responsibilities, and resumption of work are reasons for non-exclusive breastfeeding (38 39). Mothers' occupational status and working conditions could hinder EBF practice (40). There is an increase in women's participation in Nigeria's labour force due to local and national economic instability and the need for women to support the household economy (40). In 2020, about 48.1 % of Nigeria's labour force was female (41). About 27.1 million females were employed in formal or informal sectors in 2022 compared to 26.0 million in 2021 (42). Approximately 95% of women work in the informal sectors as self-employed individuals or employees of one-person businesses (43). Working women in the informal sector may face time and financial constraints because paid maternity leave does not cover many. This may force them to return to work or business earlier than the four-month maternity leave period recommended by the federal government (44, 45). Under the law, women working in formal (public or private) are entitled to paid maternity leave of four months (45). While some state governments have implemented this, some privates do not conform (45, 46). These may make EBF practice difficult. Likewise, working conditions, environment, and support got from co-workers may influence exclusive breastfeeding practice among working mothers (39, 47). With increased female participation in the labour force, urbanization, and an unfavourable breastfeeding working environment, working women may consider widely

available breastmilk substitutes marketed nationwide and discontinue exclusive breastfeeding (48)

These factors may have additional influence on the EBF practices of working women, who are a specific group of reproductive-age women who face extra challenges at work. The Nigerian government has initiated several programs and policies to improve breastfeeding practices and nutrition in children under 5. One of these is Baby Friendly Hospital Initiatives (BFHI), launched in 1991 after the Innocenti Declaration 1990 (49). It is an initiative led by WHO and UNICEF to protect, promote and support breastfeeding, implemented in several countries, including Nigeria (50). Another policy is the National Breastfeeding Policy, which later became the National Policy on Infant and Young Child Feeding (51). Also, the Nigerian government has conducted several pieces of training and workshops within the health system across the country to equip health workers with the necessary skills required to promote exclusive breastfeeding practices during antenatal clinic (ANC) visits.

Furthermore, Nigeria joins other countries yearly to celebrate world breastfeeding day every August to remind women of the importance of breastfeeding (52). Despite all these efforts, the EBF practice rate for four consecutive NDHS trends shows a minimal improvement. The EBF rate was 17% in 2003, 13% in 2008, 17% in 2013, and 29% in 2018 (31, 53, 54), showing further need to explore the barrier and enablers among reproductive-age women, especially working women, until significant improvement is recorded in the country.

2.2 Justification

Considering the morbidity and mortality resulting from poor breastfeeding practices, including exclusive breastfeeding and the available data on exclusive breastfeeding practices among working women, work-related factors pose a challenge to exclusive breastfeeding practices among working women and remain unresolved in Nigeria (39, 47, 55). While some research conducted among working women focuses on exclusive breastfeeding in formal settings, there is little focus on informal settings (47, 55). However, many studies on EBF among the general population analyse informal settings as part of sociodemographics. In addition, one piece of the literature identified maternal age, education, knowledge, and awareness as playing a prominent role in general populations of breastfeeding mothers but are less significant to working people, especially in urban areas (56). Therefore, understanding the current exclusive breastfeeding practices and barriers to exclusive breastfeeding practices among women in both sectors is paramount to developing interventions to improve exclusive breastfeeding practices among these groups. Likewise, the lack of uniformity in maternity leave across the country and the existing factors affecting exclusive breastfeeding practices in reproductive-age women may also influence poor breastfeeding practices among women working in both sectors (57, 58). For example, some states in Nigeria still allocate three months while some give four months (58). This review will gather information from available studies focusing on barriers and enablers to EBF among women working in formal and informal sectors. In addition, the study will identify existing interventions in Nigeria that help to increase EBF practices among working women and improve the nutrition status of children in Nigeria.

2.3 Research Objectives

This study aims to identify the current exclusive breastfeeding rate and explore the barriers and enablers to exclusive breastfeeding practices among women working in formal and informal sectors in Nigeria. The result is used to recommend for policymakers improve exclusive breastfeeding practices and children's well-being in Nigeria.

2.3.1 Specific objectives

1. To identify the current prevalence of exclusive breastfeeding among reproductive-age women working in formal and informal sectors in Nigeria.

2. To identify and analyze barriers and enablers to exclusive breastfeeding practices among reproductive-age women working in formal and informal sectors in Nigeria.

3. To identify and analyse promising interventions in Nigeria aimed at improving exclusive breastfeeding practices among reproductive-age women working in formal and informal sectors in Nigeria

4. To suggest evidence-informed recommendations for policy formulation towards improving exclusive breastfeeding practices among reproductive-age women working in Nigeria's formal and informal sectors.

2.4 Research questions

• What is the current prevalence of exclusive breastfeeding among reproductive-age women working in formal and informal sectors in Nigeria?

• What are the barriers and enablers to exclusive breastfeeding among reproductive-age women working in formal and informal sectors in Nigeria?

• What interventions/programs are currently being implemented to improve exclusive breastfeeding practices among reproductive-age women working in formal and informal sectors in Nigeria?

• What must be done to improve exclusive breastfeeding practices among reproductive-age women working in formal and informal sectors in Nigeria?

CHAPTER THREE

3.0 METHODOLOGY

This chapter describes the methodology and conceptual frameworks used for this study's objectives.

A literature review of existing research papers from various databases was conducted to identify barriers and enablers to exclusive breastfeeding practices among women in the formal and informal sectors. Available interventions were also analyzed alongside the barriers and enablers using an adapted7 framework model. An advanced search strategy was performed using various combinations of keywords and Boolean operators to retrieve scientific, peer-reviewed articles related to the topic from the following database Vrije Universiteit online library, PubMed, Google Scholar and Advance google scholar were also used as serch engine. and African Journal Online. Grey literature and reports were sorted from different institutional websites, including WHO, UNICEF, and Nigeria Demography and Health Survey. Articles from 2012 to 2023 were reviewed to ensure recent information. In addition, articles with 1 or more citations were included to ensure relevance. Table 1 below gives details of the inclusion and exclusion criteria used for the literature review.

A secondary search on references cited in the primary articles was performed using the snowballing technique to obtain more papers on the topic. The keywords used in the search include the following: “Exclusive breastfeeding” OR “Nutrition,” OR “Breastfeeding” OR “Infant Nutrition” AND “Practices” OR “Barriers” OR “Enablers” OR “Determinants” OR “Factors Influencing” AND “Intervention’’ “Formal” OR “Informal” OR “Working women” AND “Nigeria” OR “Africa” OR “Sub-Saharan Africa.” The comprehensive table of the search is highlighted in Table 2 in the annexe.

Table 1:The table summarises the Inclusion and Exclusion criteria

INCLUSION CRITERIA	**EXCLUSION CRITERIA**
Article published between mainly 2012 and 2023 to include papers with relevant information	Articles before 2012
Working women between 15 to 49 years	Working women outside this age range.
Articles focused on determinants, barriers, enablers of exclusive breastfeeding, and exclusive breastfeeding practices among working women in formal and informal. Interventions to improve EBF in Nigeria	Articles outside this context.
Articles on exclusive breastfeeding and breastfeeding in working women, and others where working women factors are mentioned and analyzed.	Articles outside this context.
Articles published in the English language.	Articles published in any other language.
Articles published in any part of Nigeria.	
Articles from West African countries in the same as Nigeria.	Studies from other LMICs with different contexts.

Cross-sectional study, qualitative, and quantitative studies.	Literature reviews.
Articles with abstracts and full text.	Abstract only/ Article with restriction to the full text.

3.1 Framework

The Lancet framework was chosen because it looks broadly at several factors determining EBF practice at different levels, from individual to structural, with linkages to integrated intervention targeted at all levels. It links various barriers and enablers to varying levels with the intervention to improve the situation.

These factors include maternal and infant attributes, health system factors such as antenatal clinic attendance|; family and community factors such as husband support; workplace factors like creche availability, and sociocultural factors. These are linked to interventions, such as policies and mass media, that can promote exclusive breastfeeding.

The framework has been used to predict global strategies and interventions to address breastfeeding, including exclusive breastfeeding (59). This framework is considered over other frameworks, such as the ecological model because it links determinants to intervention and includes the market structure related to breast milk substitutes (BMS) and its promotion.

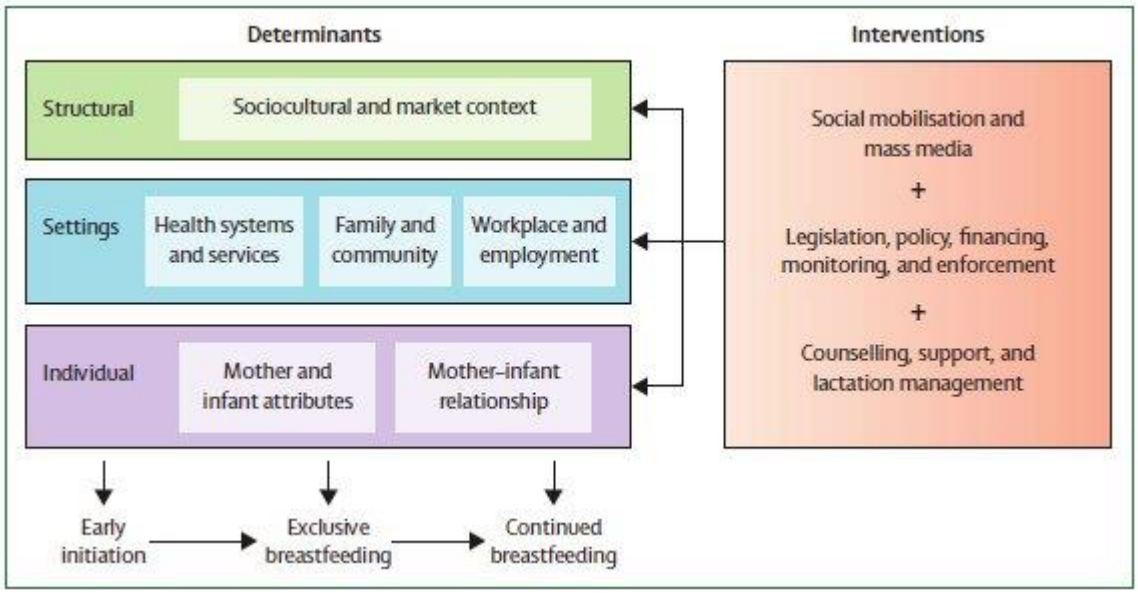

Figure 3: A Lancet conceptual framework of the determinant of breastfeeding and intervention (60).

CHAPTER FOUR

4.0 STUDY RESULT AND FINDINGS

The chapter presents the result of the literature review on barriers and enablers to exclusive breastfeeding among women working in formal and informal sectors in Nigeria. Exclusive breastfeeding has many determinants (barriers and enablers) within different contexts. The current prevalence of EBF in different regions of Nigeria will be presented first, followed by evidence in line with the selected framework following this:

- The individual factors related to the mother and the child.
- The settings: The health care system factors, the Family and Community factors, and work-related factors.
- The structure: Sociocultural norms and market context
- The Intervention to promote EBF practice among working mothers and the general population.

4.1 Current Prevalence of EBF among working women (formal and informal settings) in Nigeria.

In the absence of data on the prevalence of EBF practices among working women in formal and informal sectors in the National Demographic Health Survey 2018, review of small-scale studies from different regions in Nigeria gives an overview of the prevalence of EBF among working mothers in both sectors in Table 3 below.

Table 3: Analysis of the exclusive breastfeeding rate among working women in formal and informal sectors from different regions.

Sector: Formal/Informal	Formal	Both	Both	Formal	Both	Both	Both	Both	Formal	Formal
Geographical Region	Capital city Abuja	Southwest Ogbomoso Oyo State	Southwest Ede Osun State	Southwest Ekiti state	Southwest Egbedore LGA, Osun State,	Southsouth Calabar	Southsouth	Southeast Anambra State	Northwest Kano State	Northcentral Plateau State
Study sample=n	360	209	200	150	316	100	251	120	216	47
Current EBF Practice in %	55.8	12.9	16.0	69.8	66.1	24.0	34%	55.8	69.7	61.7
						FOR INF **				
						33.3 **66.7**				
Year of Study	**2019**	**2023**	**2021**	**2020**	**2021**	**2012**	**2022**	**2022**	**2019**	**2013**
Reference Number ***	55	61	62	63	64	65	66	67	68	69

*****Reference number of the Author INF** Informal sector prevalence

From the above table, the prevalence of exclusive breastfeeding (EBF) among women employed in formal or combined formal and informal settings, as reported in these studies, is higher than the national average of 29%. However, these studies are small-scale and not representative studies. This only provides an indication of EBF rates among working women. Among the studies conducted in formal sectors, the prevalence rates (55, 63, 68, 69) were

higher than those conducted in combined sectors (61, 62, 65, 66). Studies in combined sectors provided a mixed picture of EBF rates in formal and informal sectors. One of the combined studies conducted in Calabar, with an overall prevalence of 24%, reported a higher prevalence of EBF practice in the informal sector (66.7%) than in the formal sector (33.3%) (65). Some of the combined studies highlighted higher practices among occupations, such as farmers practising EBF more than civil servants, without giving prevalence (). Moreover, some of these small-scale studies in the formal sector are conducted among health workers with better knowledge and understanding of EBF, which may have contributed to the higher prevalence rates reported in those studies (63, 68, 69). Therefore, the current studies can not accurately provide overview of EBF rates among women in formal and informal sectors from these studies.

4.2 Determinants of the Exclusive Breastfeeding Practice among Women in Formal and Informal Sectors.

4.2.1 Determinants at the Individual Level

Based on the framework, determinants at the individual level discuss maternal and child attributes and maternal and child relationships.

4.2. 1.1 Maternal and Child Attributes

Maternal attributes are the mother's characteristics and traits that influence the decision to breastfeed exclusively. This includes knowledge, perception, maternal health condition, and socio-demographic characteristics. Child attributes are the characteristics and behaviours of a newborn within the first six months of life, such as health status, excessive crying, and refusal of feed, which influence the maternal decision to breastfeed exclusively (70).

Knowledge of EBF Practices

Most reviewed studies showed a high prevalence of breastfeeding initiation within one hour of delivery among working women, which is linked to good knowledge of the timing of breastfeeding initiation (63, 65). Likewise, good EBF practices for six months have been linked to knowledge of exclusive breastfeeding (55, 61, 64, 71). Following awareness and understanding of the benefits and practice of EBF, regardless of the work schedule or work conditions, women who determine to practice exclusive breastfeeding before delivery are more likely to practice exclusive breastfeeding. For instance, a study from Oyo state on the practice and challenge of EBF among working mothers, with a 12.9% EBF rate, showed that awareness of the benefits of exclusive breastfeeding was a significant factor that motivated participants to engage in exclusive breastfeeding for six months (61). Additionally, some working women follow the advice of healthcare workers and decide to exclusively breastfeed their babies (61, 64, 68). Conversely, a lack of knowledge can deter working mothers from exclusive breastfeeding for six months in formal and informal settings. Junior healthcare assistants and community extension workers in federal teaching hospitals in Abakaliki, southeastern Nigeria, have expressed that their non-exclusive breastfeeding practice is due to a lack of knowledge. Junior healthcare workers cited this as a reason for their behaviour (72).

Perceptions and beliefs of mothers about EBF

Perceptions and beliefs of working mothers about EBF benefits and practice greatly influence their decision to exclusive breastfeeding (61, 65, 73). According to a study conducted in the Southsouth region, many working mothers believe that breast milk alone is insufficient for a baby's growth during the first six months, which acts as a barrier to exclusive breastfeeding (65). Another wrong perception reported among working women is the belief that EBF

provides no additional benefit to children (70). Other misconceptions documented from different studies include the perception that the baby will not gain weight as expected with EBF; the perception that giving water to a thirsty baby does not affect EBF; fear of the baby becoming addicted to breast milk and refusing other feeds later; feeling that water is essential to life and that EBF is not same as water, thus baby needed it alongside breast milk (61, 70). These perceptions are barriers to exclusive breastfeeding among working women in both formal and informal sectors.

Attitude of working women to exclusive breastfeeding practice

The negative attitude among working mothers toward exclusive breastfeeding is recognized as a barrier for working women in both sectors (65, 73). Some of the nonexclusive working women from the study in Calabar believed it was embarrassing to breastfeed publicly, and few were unwilling to breastfeed because of the fallen breast after breastfeeding activities (65). In another study among reproductive-age in Nigeria, 68.1% of participants agreed that working women could not practice EBF due to work pressure. A quote from one of the working women in a focus group discussion says, "*How can a working mother exclusively breastfeed a baby while her job is waiting? This was possible in the past..... Certainly, this thing is not for the women of today"* (73).

Confidence in breastfeeding after delivery

Developing the self-confidence to breastfeed after delivery is an important factor that enables working mothers to initiate and continue breastfeeding as desired. Approximately 78.6% of working women surveyed in a teaching hospital in the southeastern region agreed that confidence after delivery assisted them in breastfeeding (67) exclusively.

Maternal health and breast condition

Several studies have identified poor maternal health as a significant reason for non-exclusive breastfeeding in formal and informal sectors (39, 60, 71). In Oyo state, southern Nigeria, working women cited poor maternal health (55%) and breast diseases like cracked nipples or breast engorgement (58.9%) as reasons for not exclusively breastfeeding (61). When there is a delay in lactation or recovery from anaesthesia, pain, or complication following the caesarian section, the baby may be introduced to breastmilk substitutes in health facilities before discharge. This can prevent working mothers from exclusive breastfeeding practices since using breastmilk substitutes at home may seem more convenient (63, 68, 70). Other studies involving working women also highlighted maternal conditions, breast pain, poor lactation, and insufficient milk production by the mother as barriers to exclusive breastfeeding (39, 47).

Maternal Sociodemographic

Studies have shown variations in EBF practice among working mothers pertaining to age, educational level, economic status, location, or living area, as discussed below:

Age: The practice of exclusive breastfeeding among working women in formal and informal sectors varied based on age group. Some studies documented a high level of EBF practice among younger ages of different categories, and few identified increased EBF practice among older ages above 40 (65, 67, 74). Working women aged between 20-29 years practised EBF more than other age groups, as revealed in a report from Anambra state, southeast Nigeria (67). Similarly, a study on the attitude of working mothers towards exclusive breastfeeding in the south-south region found that working women aged 27-37 years had the highest exclusive breastfeeding (EBF) rate compared to the 16-26 and 38-38 age groups (65). In Oyo state, southwestern Nigeria, 75% of working women above 40 years and 71.4% of those under 20

years had good exclusive breastfeeding practices (61). Also, increasing maternal age was found to be a barrier to exclusive breastfeeding practice in a study on factors influencing exclusive breastfeeding attitudes among working women in Oyo state. This was attributed to a high unemployment rate that delayed childbearing among educated women, job demands, and careers after employment (75). Overall, more studies in the review documented that working women below 40 (65, 67, 75) practice six months of EBF than those above 40 (61).

Marital status: Working women who are married practice exclusive breastfeeding more than single, separated, or divorced women (39, 20, 63, 65). The reason could be that married working women enjoy more social and family support from husbands and relatives than single or divorced mothers (39, 62, 63, 65). Likewise, some single women engage more in activities that create little time for exclusive breastfeeding to generate additional income to support themselves. At the same time, some tend to preserve their breasts for beauty (61). Culturally, married women within the society earn more respect from the community than single (76) may contribute to the support they gain during child care. Therefore, single status is a barrier to exclusive breastfeeding practice among working women.

Years of marriage: Few studies revealed that years of marriage influence exclusive breastfeeding practice among working mothers in formal and informal sectors. There was a statistical association between years of marriage and exclusive breastfeeding practice (p=0,003). Working mothers who were marrying for 1 to 5 years in the study practice EBF more than those marrying for more than five years (69). This could be due to reduced family size and fewer children, which reduces the time needed to care for other children compared to a larger family.

Level of education: Working mothers with secondary school education and above had a higher rate of exclusive breastfeeding than those with primary or no education (39, 63). A survey conducted in Calabar, in the south-south region, revealed a significant prevalence of EBF among educated working women, with the highest rate observed in those with tertiary education (41.7%), compared to only 8.3% among illiterate women (65). This finding aligns with a study in Enugu, which reported a high level of EBF practice among high-educated working women than others (39). This is attributed to their understanding of the health benefits of exclusive breastfeeding and access to information. However, a contrasting result was observed in a study on factors influencing exclusive breastfeeding among the working class in Ede, southwestern Nigeria. The findings indicated that working women with no formal education practised EBF more than those with formal education (62), possibly due to the nature of job and career progression considerations in those with formal education who are more likely to work in the formal sector.

Husbands' level of education

A link has been found between husbands' educational level and EBF practices among working women. A case study from Imo state among working mothers reported that working mothers with a husband who attains a high academic level were more likely to practice EBF than those with a lower educational level husband because of their level of understanding and reception of information (74) which may help adoption of behavioural changes and support wife for EBF.

Socioeconomic status and income levels: Socioeconomic status could be a barrier or enabler to EBF among mothers working in both sectors. Several studies have identified that high socioeconomic status and high-income groups hinder EBF practice among working mothers in both industries (61, 65), as poorer EBF practice tends to be more prevalent among higher social classes. For instance, in Calabar, a report on 100 participants showed that the high social class had a lower rate of 16.66% among women who practised exclusive breastfeeding. In contrast,

the lower socioeconomic class had a higher rate of 58.33% (65). This is similar to findings from Ogbomoso in the southwestern zone that working mothers with high incomes were less likely to practice exclusive breastfeeding than working women with lower payments (65). Although the reason was not given for these findings, the low EBF rates among high-socioeconomic working women could be due to the accessibility and affordability of breast milk substitutes. In contrast, the high EBF rates among low-socioeconomic working women are attributed to their inability to afford breastmilk substitutes and the nature of work.

Parity and family size: Family size significantly influences exclusive breastfeeding (EBF) practice among working mothers in both sectors (39, 65, 74). From a study in Calabar, working mothers with smaller family sizes (1-2 children) had the highest EBF rate at 75%, while those with larger family sizes (3-5 children) had the lowest EBF rate of 8.33% (65). A cross-sectional study in Enugu further supported this finding, showing that working women with 1-4 children were three times more likely to practice EBF than those with five or more children (39). Similarly, a case study in Imo state, Nigeria, involving working mothers in a tertiary institution also confirmed the influence of family size on EBF practice (74). Therefore, fewer children or smaller family size creates time for exclusive breastfeeding.

Religion: Religion has been linked to exclusive breastfeeding practice among working mothers (61, 62, 65). Three studies reported a statistically significant association between religion and EBF. Two of these studies found that Christian working women were more likely to practice EBF than their Muslim counterparts, with p-values of 0.004 and <0.000, respectively (61, 65). However, a report from Ede, southwestern Nigeria, indicated that Muslim working women were more likely to practice EBF than Christian working women, with a p-value of 0.0000. (62). This variation suggests that other factors, such as sociocultural belief, may significantly influence EBF practices among working mothers of different religious backgrounds.

No information has been found between ethnicity and the practice of EBF among working women in formal and informal sectors in the review.

Location: The link between location or area of living and EBF practice has been documented in the general population. Rural dwellers have a higher rate of exclusive breastfeeding compared to semi-urban and urban dwellers (73).

Baby Health Status

Working women in both sectors also mention that poor baby health hinders them from initiating and continuing exclusive breastfeeding (61). Although examples of the baby's health condition were not found in the review literature, a baby with a congenital malformation such as a cleft palate may find it difficult to suck. Moreover, the refusal of the baby to suck, increased baby appetite, and excessive crying by the baby in an adaptation to the environment, which the mother perceives as hunger,/ are infant factors mentioned as barriers to EBF practice (47, 61, 70).

4.2.1.2 Mother-to-child Bonding

Although the studies reviewed did not provide information on mother-to-child bonding, culturally, breastfeeding is an acceptable norm that facilitates mother-and-child bonding, and most women want to experience it (70, 73). A study on constraints to exclusive breastfeeding among breastfeeding women supports this. The preparedness of women to experience and enjoy the act of breastfeeding encourages mothers to initiate breastfeeding and exclusively feed for six months (77).

4.2.2 Determinants at different settings

4.2.2.1 Health System and Services.

Several factors related to the health system and services have been identified as determinants of EBF practice; these include the place of the antenatal clinic and the number of clinic visits, the place of delivery, the mode of delivery, and the attitude of health workers.

Antenatal clinic booking in health facilities and number of visits

Booking for antenatal clinics in health facilities and increased visits to antenatal clinics enables working women to practice EBF because it increases access to information and peer counselling during the antenatal clinic (39, 65, 75) and assists in determining how to practice EBF despite the work schedule. A study conducted among working women in Enugu revealed that 72% of those booked at the hospital practice EBF (39). Among women surveyed in Calabar, 83.3% of working women who practice EBF attended antenatal clinics compared to 16.7% of those who did not participate (65). Kano's study among health workers shows that those with four visits had the highest EBF rate (23.5%), followed by those with 1-3 antenatal clinic visitations (19.8%), and lowest in those without visitation at 6% (68). This shows that consistent listening to the same information facilitates adoption and increases the chance of behavioural changes that promote EBF practice.

Delivery within health facilities

The chance of exclusive breastfeeding practice increases with delivery within health facilities as a significantly higher proportion of mothers who practice EBF delivered in health facilities (69,75,78). A study on determinants of EBF among women in Nigeria shows that mothers who have their babies born in health facilities practice EBF more than those who give birth at home (69). A similar report from Ghana among mothers confirmed that those who delivered at health facilities, precisely government hospitals, are three times more likely to practice exclusive breastfeeding than their home counterparts (76). Delivery outside health facilities among working women is linked to traditional and religious beliefs (69, 75, 78).

Mode of delivery

The delivery method generally contributes to exclusive breastfeeding practice among working mothers, irrespective of the sector. While safe vaginal delivery (SVD) and assisted vaginal delivery are enablers of early initiation of breastfeeding and EBF among working women, delivery through the caesarian section is a barrier (39, 63, 64, 68). About 62.7% of the working women in a study conducted in Ogbomoso, Oyo state, mentioned that delivery via the vagina encourages them to initiate and practice exclusive breastfeeding thereafter (59). The findings concur with the report from Kano, northwestern, among healthcare workers, where 74.1% of those who had vaginal delivery practice exclusive breastfeeding (68). Compared with a study from Ghana, a neighbouring country, a survey among city-dweller professionals shows that those who delivered via SVD are ten times more likely to practice EBF than their cesarean section counterparts (OR 9.54; 95 % CI 3.43, 26.54) (79). The reason for non-exclusively breastfeeding among working women in both formal and informal sectors is that maternal health could not withstand the rigours of frequent breastfeeding due to pain following a cesarean section and recovery time (63, 68, 70). Therefore, some babies delivered via cesarean section were commenced on artificial formula within the health system, which makes it easier for mothers to continue providing at home.

The attitude of health workers toward support for EBF

The availability of support from health professionals could deter or encourage exclusive breastfeeding practice among working women regardless of sector. (47, 63 67). A report among bankers surveyed in Lagos, southwestern Nigeria, revealed that they were supported by the health care worker to practice EBF (47). Likewise, 10.83% of working women who were examined on the challenges of EBF in the southeastern region got support from health professionals (67). In contrast, a lack of support from health professionals was mentioned as the reason for nonexclusive breastfeeding by respondents (70).

Source of information and provision of correct information

In general, receiving the correct information from the right source greatly influences exclusive breastfeeding. Working women from several studies have identified health facilities and health providers as their sources of information on EBF practice (39, 55). Ninety per cent of the respondents from a survey conducted in Enugu received information about EBF from health professionals, while 5.8% and 4.2% received it from fellow mothers and the media, respectively (39). Similarly, eighty-five per cent of the study population in Abuja mentioned Health facilities and healthcare providers as their source of information on exclusive breastfeeding (55). Most of these respondents had good knowledge of EBF practice, which shows that health professionals shared correct information during the antenatal clinic. This finding agreed with the study conducted in Ghana to examine the practice of exclusive breastfeeding among professional working mothers, where all respondents mentioned health facilities as a source of information on EBF (80).

Inadequate training /lack of knowledge of EBF practice among healthcare workers

The primary source of information and advice mentioned by working mothers in both sectors are healthcare workers and relatives (64, 67, 70). This shows the need for healthcare workers to know EBF practice and its benefits. Studies have shown that the passage of wrong information during health education in antenatal and delivery contributes to low EBF practice in the general population and working mothers (68). Many participants from a qualitative study of mothers who did not practice EBF revealed that they did not practice EBF due to misinformation from health workers (70). One of the participants says, *"I was told by a nurse that EBF only prevents the baby from having infections, so if I can be clean with what I give my baby, then there is no need for EBF."*. (70). A nurse who took part in the discussion confirmed that while it is recommended for mothers to practice exclusive breastfeeding due to its benefits for the baby's health, in reality, it is difficult to practice and often considered more of a theoretical concept (70). This shows that while some healthcare workers need re-training, others need motivation to improve EBF practice in the general and working populations.

Promotion of breastmilk substitutes (BMS) within the health system

Although a correlation has not been statistically shown in the reviewed studies among working women, the Promotion of breastmilk substitutes among health workers affects both working mothers and the general population**.** Fourteen per cent of participants from the 2018 report on marketing baby formula in Nigeria claimed that healthcare workers advised them to use a particular breastfeeding formula (81). This act is usually associated with financial or material incentives received from product representatives (81). Promoting BMS may discourage nursing mothers, including working mothers, from practising exclusive breastfeeding.

4.2.2.2 Family and Community level

Support from spouses, relatives, and friends within the community

Men have a role in promoting breastfeeding and ensuring EBF practice (80). Studies have shown that the husband's and relatives' support could assist in achieving six months of exclusive breastfeeding in working women in both sectors (64, 67). A significant percentage (80.7%) of the 316 working women with infants 0-24 months surveyed in Osun state, the southwestern part of Nigeria, enjoyed support from their husbands and relatives, which enabled them to practice EBF (62). Other studies reported a higher ability to exclusively breastfed for six months among working women who gained support from their partners, relatives, and friends (63, 67). A mixed study on constraints to exclusive breastfeeding among breastfeeding mothers in southwestern Nigeria revealed that husbands' and grandmothers' support influenced the decision to breastfeed in a general population (77). Also, the lack of support from husbands and relatives was the reason for the discontinued EBF among working women in the Abuja study (55).

Peer group support:

Support from a breastfeeding peer group within the community encourages working mothers to breastfeed exclusively. About 4.5% of surveyed working women in Lagos among bankers reported support from the peer group (47). Also, 2.5% of respondents from a study in the Eastern part of Nigeria got advice on exclusive breastfeeding from the community group (67).

Availability of helpers after delivery

The presence of a helper after delivery enables EBF practices among working mothers. A significant association was found between the availability of helpers after delivery and the practice of EBF in the study conducted in Ekiti among female healthcare workers. In this study, 55.3% of the participants testified that the presence of helpers assisted their practice of exclusive breastfeeding. (60), and 84.7% of participants claimed that if help is available to them all the time after delivery, they will practice EBF (62). This shows that the availability of helpers at home could help achieve exclusive breastfeeding among working women as this allow them to cope with the stress of breastfeeding and work. However, contradictory beliefs about available helpers could deter EBF practice among women, including working women. One of the participants in a focus group discussion conducted in a qualitative study among women who did not practice EBF explained that she couldn't practice exclusive breastfeeding because while away from home, her mother fed the baby with water as she believed water is essential to life. Another mother says, *"I was giving my baby only breast milk until my mother visited and insisted on giving him water."* (70).

4.2.2.3 Work Place and Employment

The nature of work and the settings have been found to influence EBF practice among working women (55, 57, 64). The majority of factors identified in the workplace, such as an unconducive environment and lack of breastfeeding policy, are barriers to EBF practice.

Type of employment

Employment in formal sectors, either public or private, was identified in most of the studies reviewed as a barrier. Studies have shown that women working in public and private sectors are less likely to practice EBF than their counterparts in informal sectors who are self-employed or engaged in farming or trading activities (61, 65, 70). Working in informal sectors could provide an enabling environment for EBF practices. For example, market women, due to the

flexibility of work, can carry the baby to working place. A report from Ogbomoso, Oyo state, shows that those in other sectors (assumed to be the informal sector), including casual workers practice exclusive breastfeeding than government employees (61). Likewise, the study in Calabar on the attitude of working mothers to exclusive breastfeeding shows that 66.7% of women who practised EBF for six months are self-employed (65). A study among 479 reproductive-age women, where 97.9% of participants are working women in different sectors, shows that 34.0% and 31.9% of those who practised exclusive breastfeeding are farmers and traders, respectively, compared to 12.8% each for civil servants and private employees (73)

Duration of maternity leave

Based on the maternity leave law**,** working women in formal sectors should have access to paid maternity leave for at least four months. The type and variation in the duration of maternity leaves determine the course of EBF practice among working mothers in formal sectors. The longer the duration, the higher the chance of practising exclusive breastfeeding (64). A descriptive study among female health workers in Ekiti, a southwestern state, found a significant association between the duration of maternity leave and the practice of EBF (p-value=0.000) (63). Working women with up to 4 months of maternity leave are more likely to practice EBF than those with three months, implying the importance of maternity leave as an enabler of EBF practice among working women in formal sectors. Lack of paid maternity leaves, probably in private organizations, and short maternity leaves were revealed as a barrier to EBF by 60.0% and 51.1% of the participants in a study conducted in the Federal capital territory (55). Also, short maternity leave as low as one month to two months was mentioned as a barrier to EBF practice among those working women in Osun state, Southwestern part, and among health care workers surveyed in Kano, Northern part (64, 68). This is in tandem with a study conducted among city dwellers professionals in Ghana that those with shorter maternity leave are less likely to practice EBF (78). A survey report conducted on maternity entitlement gives a view of the duration of maternity leave in different regions in Nigeria that could affect EBF practice. Lagos, Kaduna, and Enugu states give 24 weeks while Bauchi and Kano give 12 weeks (58).

Women in informal sectors are not a beneficiary of maternity leave. The time taken as maternity leave depends on the individual and the type of work (58). The maternity leave may be unpaid for those employed in small-scale or unregistered businesses. These workers may be under financial constraint to resume early, affecting exclusive breastfeeding practice. For self-employed, the duration of maternity leave depends on many factors, such as the presence of an assistant or a salesgirl, her economic situation, and whether the husband alone could financially sustain the family during maternity leave (58). One respondent in the focus group discussion conducted in a qualitative study among women who did not practice EBF explained that she returned to work at the market just two months after delivery to provide for her family financially. Others reply that they resumed early to retain their customers (58). This shows the importance of maternity to both formal and informal sectors.

Work pressure following the resumption

This is a significant reason for discontinuing EBF practice in both sectors, especially in formal settings. Respondents from a study on knowledge, attitude, and support for EBF practice among bankers in Lagos state, Nigeria, reported work pressure and poor support from work as reasons for non-exclusive breastfeeding (47). Also, a study conducted in Plateau state, North central part of Nigeria, among 47 female resident doctors (doctors in training to become specialists) on barriers and facilitators of EBF shows that 61.1% of 11 doctors who did not practice EBF reported work pressure while 22.2% reported inadequate lactation and early

resumption as the reason for nonexclusive breastfeeding (69). Likewise, those in informal sectors also revealed the pressure of combining breastfeeding with their business, and everyday activities such as caring for other children are a barrier. In this situation, breastmilk substitute is the solution (73).

Unconducive environment for breastfeeding

Another barrier to EBF practice among women working in the formal sector is the unconducive environment at the workplace (39, 56, 63, 66)**.** This is reported by 58.3% of respondents in the Abuja study (55). Also, ninety per cent of female healthcare workers studied in Ekiti declared that their workplace policy does not permit them to take their children to work, and about 66.3% of the respondents said they could not get an hour's break for breastfeeding their baby from their authority, and 71.3% mentioned a lack of creche within their proximity as a barrier (62). Also, 28% and 14% of working women surveyed in Bayelsa said a lack of a comfortable environment and insufficient time for breastfeeding as barriers to exclusive breastfeeding (66). Likewise, 30.5% and 17.5% of respondents from Ghana study among professional working mothers mentioned insufficient time and lack of a conducive place for the breast as a challenge in their working place (79). Other barriers are long working hours following maternity leave resumption, late closure from work, no breastfeeding breaks, and lack of electricity to store expressed milk were also mentioned in this study (39, 55). Working mothers in Enugu, Eastern part of Nigeria, revealed in the survey that early resumption of work and lack of breastfeeding facilities were reasons for discontinuing EBF practice (39).

Workplace breastfeeding policy

Workplace policies such as breaks for nursing or breastfeeding mothers to breastfeed, early closure from work for nursing mothers, and flexibility of working from home or part-time for a specified period after resumption encourage working women to practice exclusive breastfeeding (55, 61). Also, creches near the workplace promote exclusive breastfeeding (55). A Federal Ministry of Health report in Nigeria has shown that many organizations do not have written policies to support breastfeeding women (82). Some working women are unaware of its existence where it is available (58).

4.2.3 Structure Level

Although most papers reviewed did not report on sociocultural practices affecting working women in formal and informal sectors, some of the literature conducted among reproductive-age women and exclusive breastfeeding shows the influence of sociocultural practice on the initiation of breastfeeding and exclusive breastfeeding (73). In Katsina state, the northern part of the country, respondents' report shows a low prevalence of exclusive breastfeeding due to different cultural practices (83). One of the cultural practices is the traditional removal of the uvula following birth in some families which exposes the child to infection. Because of this, the mother gives traditional herbs seen as medicine for cure alongside breastfeeding. Another one is 40 days of bathing, which encourages the mother to stay at home and breastfeed the baby without participating in any activities or work within the house (83). This could have a positive influence on exclusive breastfeeding practices. Likewise, Yoruba ethnic culture believes feeding a baby with water alongside breastmilk is a norm as the baby needs water to quench thirst and relief hiccoughs (64). Market strategies are another means used to promote substitutes and convince mothers of the need for substitutes by producers of breast milk substitutes. For example, the refusal of milk by a baby is attributed to hunger and the demand for breastmilk substitutes (60). Other common infant adaptations to the post-birth environment that breast milk substitute producers and marketers use to promote their products are crying

and short night-time sleep durations, which mothers often perceive as signs of feeding problems (59, 80).

4.2.4 Intervention in Nigeria to Improve EBF Practice

Several barriers have been identified at different levels. This section uses the framework to discuss identified interventions, including good practices, programs, and policies within Nigeria to improve EBF among working mothers at different levels. The intervention is multilevel strategies interplay at different levels. Although most of the identified interventions were directed at women of reproductive age who are breastfeeding, they apply to working mothers as they are part of reproductive-age women.

A. Counselling support and lactational management

Adoption and Establishment of Baby Friendly Hospital Initiative (BFHI)

As mentioned in the problem statement, BFHI was adopted to protect, promote, and support breastfeeding and combat malnutrition and other related childhood illnesses. The BFHI initiative involves ten steps for successful implementation, including developing a health facility breastfeeding policy that is communicated to all healthcare staff, training healthcare staff on BFHI and IYCF, and educating pregnant women about breastfeeding benefits. The first three steps ensure all mothers, who receive antenatal in health facilities, including working mothers, get the correct information on EBF practice. Others are supporting early initiation of breastfeeding, providing lactational management guidance, promoting exclusive breastfeeding for six months, encouraging mother-baby bonding, assisting with breastfeeding issues, and avoiding artificial teats. The last step discusses establishing breastfeeding support groups in the community and referring mothers to them on discharge from the hospital. This support group encourages all mothers to practice exclusively and reminds them of EBF's importance. Although this initiative has improved the initiation of breastfeeding and exclusive breastfeeding practice in some states where it has been adopted, gaps still exist as the ten steps are not fully implemented. The initiative has not been adopted in all states (49). This approach helps all women, including working mothers, prepare their minds towards exclusive breastfeeding as they receive educational messages during antenatal clinics on maintaining lactation and breastfeeding at work, such as expressing breastmilk.

Workplace support intervention

The Lagos State Government, within the workplace, in a bid to promote EBF, has established a support system for nursing mothers in Lagos State government agencies by making crèche available to breastfeeding mothers in the workplace. The creche provision would encourage mothers to effectively carry out recommended breastfeeding practices within the workplace while simultaneously carrying out their duties at work (84).

Educational health program for men and their engagement in breastfeeding activities

Engaging men in educational programs has supported women to breastfeed for up to six months (85) exclusively. A study in healthcare on the importance of involving fathers in ANC revealed that when men follow their women to ANC, they receive counsel on the issue of EBF practice and its benefit to the family, which makes it easier for the women to gain their husband's support for exclusive breastfeeding (85). A quasi-experimental study conducted among expectant fathers examining the effect of a breastfeeding educational program on fathers' intention to support exclusive breastfeeding shows a significant change in intention to support EBF for six months. Many expectant fathers who received the educational program are willing to support their wives for six months of EBF than the control. The positive impact on intention

toward EBF support means that targetting fathers for the educational program will enhance women's capability to breastfeed exclusively for six months through support from their spouses (85, 86).

B. Legislation, policy, finance, and enforcement

Nigeria Labour Laws

The Nigeria labour law 2004 permits three months of maternity leave for female pregnant workers who have been employed for at least six months. These three months' leave is split into two of six weeks before the expected delivery date and six weeks after delivery, and it allows for at least fifty per cent salary payment during maternity leave. Upon resumption, working women are entitled to thirty minutes breastfeeding break twice a day during working hours to breastfeed their child (87). This was also documented in the 1990 law of the federation and the 2008 public service rule. While this does not applicable to the informal sector, there is variation in its application in formal private sectors. It depends on the contract agreement (58).

Adjustment of Paid Maternity Leave Law and Policy

With the above, the Nigerian government reviewed the maternity policy in 2018 to improve the exclusive breastfeeding rate in the country and allow working mothers to breastfeed for more time during working hours. The maternity leave was increased to sixteen weeks (4 months) with two hours breastfeeding break daily for working mothers to breastfeed their babies. Although some private and public units of the formal sector offer maternity leave, some private sectors do not. Despite this adjustment at the national level, there is still variation in the duration (58). This has a negative impact on exclusive breastfeeding among women working in the formal sector.

Moreover, a study from 38 low and middle-income countries assessing the effect of increased paid maternity leave on exclusive breastfeeding shows that a month's increase in paid maternity is associated with a 5.9% point increase in exclusive breastfeeding up to six months (88). Although no policy or law governs working women in informal sectors, A study examining the visibility cost of maternity leave cash transfers for women in informal sectors in Ghana shows that the cost implication is lower than the cost of not breastfeeding (89). This shows the effectiveness of maternity leave as an intervention to improve exclusive breastfeeding among working women.

Adoption of the International Code of Marketing Breastmilk Substitute (The code)

Nigeria has a legislation term, The Code on Marketing of Infant and Young Children Food and Other Designated Products, established in 2005. This code was reviewed per WHO/UNICEF's recommendation of implementing international code. The aim of the Code is to protect exclusive breastfeeding and curtail aggressive marketing of BMS via any media, including distributing free samples to mothers, their relatives, or the health system. This code was controlled by the National Agency for Food and Drug Administration and Control (NAFDAC) to promote breastfeeding, including exclusive breastfeeding, and prevent unduly promotion of breast milk substitutes. However, enforcement of the code is poor, and the manufacturer continues advertising and promoting their product freely within the country (81, 90, 91).

C. Social mobilization, mass media, and Advocacy

Use of interpersonal communication, mobile phone support, and mass media messaging

The clinical trial conducted in Lagos, Nigeria, promotes early initiation and exclusive breastfeeding among nursing mothers in private hospitals. The intervention and control groups

included 600 participants each, with 84% and 80.2% working mothers, respectively. The formal sector constituted about 56% and 49% of the groups. The intervention involved training healthcare workers and facility managers on breastfeeding support and counselling skills. Breastfeeding mothers received communication, lactational education, and support during pregnancy and after discharge through WhatsApp reminders at 6 and 24 weeks. Mobile phone messages were also sent to spouses and influential individuals like grandmothers to provide additional support. At six weeks, the exclusive breastfeeding rate was 83% in the intervention group and 76% in the control group. At 24 weeks, the intervention group had a 66% exclusive breastfeeding rate, while the control group had 52%. The study highlights the importance of healthcare workers having the right knowledge of EBF and passing the correct information to and supporting pregnant women during ANC in promoting EBF practice. Involving husbands and grandmothers is crucial in gaining their support for EBF, ultimately increasing women's confidence to breastfeed for six months exclusively (92).

Use of Mobile Phone-Based Support

Another study also demonstrated the effectiveness of mobile phone support on exclusive breastfeeding in nursing mothers, including working mothers, through a hospital-based controlled trial. The study was conducted among women who gave birth at the University of Port Harcourt teaching hospital. The intervention and the control group consist of 87% and 92% of working women, thus relevant to working women. Breastfeeding sessions and proper technique training were provided to the mother in the facilities before discharge. Following discharge, nursing mothers received support via call every month for six months till the end of the study, reminding them of the EBF practice and its importance. Answers were granted to all their questions and concerns. At the end of six months, the study reported a consistent increase in the rate and duration of EBF practice in the intervention group compared to the control group over six months. A higher EBF rate of 55.2% was found in the intervention group compared to the control group, with 46.8% (93).

Alive and Thrive Alive Project

Thrive is a non-governmental organization in 120 countries, including Nigeria. This organization aims to improve exclusive breastfeeding and complementary feeding in children through different strategies. The Thrive works closely with UNICEF and the Nigerian government in other states to promote infant and young child feeding through strategies that include advocacy through religious and community leaders, interpersonal communication, and social mobilization such as face-to-face conversation or the use of community volunteers on the importance of EBF (94). This approach improves knowledge of infant feeding practices, including EBF practice in nursing mothers and working women. The organization has partnerships with some states government in Nigeria to improve breastfeeding practices in the states. The organization collaborated with Kaduna and Kano state governments using these approaches to raise EBF practice in Kaduna from 27.0% to 43.5% and Lagos from 54.6% to 63.5% in the intervention group over three years in a control trial study conducted in those states (95).

Based on the framework, the summary of the above findings on barriers and enablers to EBF among working mothers in Formal and informal sectors is presented in Table 4 in the annexe.

CHAPTER FIVE

5.0 DISCUSSION, STRENGTHS, AND LIMITATIONS OF THE STUDY

5.1 Discussion

The previous chapter presents results only from small-scale studies on the barriers and enablers among women working in formal and informal sectors at different levels and settings. This chapter will further interpret the result to draw a conclusion that leads to practical recommendations to improve exclusive breastfeeding practices for six months among working women in both sectors.

Various barriers and enabling factors affect EBF practices among women in formal and informal sectors. This review identified work-related issues affecting women working in formal and informal sectors. The practice rate depends on the nature of the job and other factors. Factors such as the absence of helpers, unpaid maternity leave, short maternity leave, lack of support from family, and an unconducive environment were parts of the barriers in formal settings. Similarly, the lack of helpers at home, helpers at the shop such as sales girls, and lack of support from family were barriers in the informal setting. It is evident that knowledge, perception, attitude, support from family and community, and work-related issues greatly influence the decision to breastfeed exclusively among working women in both formal and informal sectors. Although other factors interplay, knowing about exclusive breastfeeding (EBF) and its benefits, having a positive attitude towards EBF, and choosing to breastfeed exclusively can help overcome challenges like being unable to take the baby to work. Instead, working mothers can develop the habit of expressing breastmilk for childcare facilities or relatives who stay with the baby for her to practice EBF for the first six months. Younger age, higher literacy level, marriage, and low socioeconomic and low-income levels are enablers of EBF in both sectors. While higher literacy may help acquire knowledge, working women who are married and of high-income status may not be able to sustain exclusive breastfeeding practices for six months due to societal influence and work schedules, as they are more likely to work in formal sectors. Also, single working mothers and some married younger women may not practice exclusive breastfeeding, probably to preserve the shape of their breasts and beauty. Financial constraints may prevent some low socioeconomic status in both sectors from practising EBF for six months because they believe they are not eating well to withstand the stress of exclusive breastfeeding, especially those in informal sectors. Also, older women over 40 may neglect exclusive breastfeeding due to larger family size and lack of time, as they are more likely to have more responsibilities or experience nurturing many children without practising EBF. This shows that both younger and older working women of all socioeconomic classes, irrespective of marital status, need to be targeted to improve EBF practice among working women in both sectors.

The studies have emphasized the significant role of husbands' educational level in achieving exclusive breastfeeding for six months. Education level may determine income, occupation, living area, and societal interaction. Regardless of the sector, working women and husbands' educational attainment may increase access to the correct information on EBF and its benefits. However, it may only become practice if other factors are removed, such as working women's beliefs and workplace barriers, especially among high educational levels. Highly educated women and their husbands are likely to live in urban, economically stable to afford breastmilk substitutes. Likewise, findings show that family, peers, and community interaction and advice could negatively influence EBF and facilitate the early introduction of fluids or foods before six months. Family and community may easily influence younger women of low educational levels in informal sectors to complement breastfeeding. Due to work pressure and other

responsibilities, working mothers in the formal sector, especially single mothers, may be easily influenced too. This reason highlights the importance of family and community, sociocultural and work support in promoting exclusive breastfeeding among working women in both sectors. Therefore, using a multilevel approach to address barriers in all settings for effective results is crucial in enabling the six-month EBF practice among working women. Booking outside health facilities with reduced ANC visits and delivery through the Cesarean section are also identified barriers in both sectors.

Establishing a community baby-friendly support group, health education at ANC, and local media such as radio stations can help improve breastfeeding practices among informal sectors, especially the illiterate and those in rural areas. Interventions like mass media campaigns using various media channels to disseminate messages about exclusive breastfeeding direct to working women and the general public, interpersonal communication, and social mobilization involving relevant stakeholders-employers, health workers, and community leaders to gain support for EBF can target working women in both sectors, especially those in urban areas. The Alive and Thrive projects are using some of these strategies. Expanding this project through advocacy with various stakeholders, including men, will help achieve behavioural changes and dispel myths and misconceptions in the community, such as giving water to a newborn or another woman breastfeeding someone's baby for a particular period. Creating awareness in the community on EBF and antenatal booking will promote six-month exclusive breastfeeding in mothers who work in both sectors.

Sharing wrong information and poor knowledge among lower cadres in health sectors emerged as a barrier to their non-exclusive breastfeeding practice. As this set of health workers is regarded as professionals within the community regarding information and knowledge sharing, their lack of knowledge may negatively influence the general population and working mothers. Training and retraining are part of the ten steps of BFHI; implementing BFHI in all facilities will equip health workers in maternal and health services, including junior workers, with the skills needed to promote EB. The implementation will improve health workers' attitudes and reduce the promotion of breastmilk substitutes among them. This is also necessary as some primary health centres in Nigeria, especially rural areas, are headed by junior workers. Likewise, BFHI will allow health workers to prepare working women in both sectors for exclusive breastfeeding from the first trimester of pregnancy till delivery and change their perception to make the right decisions towards six months of exclusive breasting practice.

Many workplace factors identified are barriers that prevent working women in formal sectors from exclusive breastfeeding. Studies have shown that many working women in formal sectors breastfeed exclusively during maternity leave but stop in preparation for the resumption. The government's commitment is required not only in finance but also to ensure Nigeria labour law and maternity leave policies in the workplace are implemented appropriately, especially in the public and private sectors. When government ensures that all organizations, including the public and private, have a written breastfeeding policy and is implemented according to the maternity law, Every working woman will be encouraged to breastfeed exclusively beyond the maternity leave period.

The breastfeeding policy should entail paid maternity leave, creche within the facilities, breastfeeding space, breastfeeding breaks, and flexible work shifts after resumption for mothers to work from home or close early to breastfeed. Some working women use creches far from their place of work, and few leave their babies with community nannies, which reduces the chance of breastfeeding at work. Providing creche within the organization for breastfeeding mothers as part of the breastfeeding policy removes this barrier and could serve as an additional source of income for the organization.

Likewise, working women in the informal sector also practice exclusive breastfeeding for a shorter period at home before resuming their businesses, looking at the feasibility of maternity cash transfers for this set of women who are not covered by the paid maternity law, as done in Ghana, could ease the financial hardship and promote exclusive breastfeeding among working women in the informal sector.

The Nigerian government has established laws and policies in line with international standards to improve breastfeeding among working mothers and curtail the promotion of breast milk substitutes. However, weak implementation and poor monitoring at various levels make the law and policies ineffective. The full implementation with proper monitoring of an international marketing code for breastmilk substitutes can reduce the market availability of BMS and the effect of market context on women working in both sectors and communities. This will ensure that all marketing companies abide by the law. Training of mothers on lactational management,

When working mothers understand the benefits of EBF and significant barriers at the workplace are removed, social mobilization and advocacy are given priority, and BFHI is implemented fully in all health facilities and followed up with mobile support. Exclusive breastfeeding practices among women working in both sectors and women of reproductive age will be improved.

5.2 Strengths and Limitations of the Study

The chosen framework has been valuable in diving into different levels of barriers to EBF practice among working women. Compared to the primary data collection method, the literature review method only brings together existing data on the barriers and enablers to EBF and does not allow exploring new issues related to EBF practices among working women in Nigeria's formal and informal sectors. A lack of literature on informal sectors limits the comparison; however, all effort is made to compare where possible. Likewise, there is a paucity of information for working women on market structure and maternal-child bonding framework. However, data were obtained from literature among reproductive-age women, where working women constitute a larger proportion of the study population. The study focused on EBF and did not consider continued breastfeeding in the framework; however, breastfeeding initiation was assessed. While efforts were made to look at the recent literature, some old literature of relevant information linked to Baby friendly hospital initiatives and policies was used. The sociodemographics and socioeconomics factors were assumed to be part of the mother's attributes in the framework. Sociodemography factors were considered to be part of the mother's attributes.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATION

6.1 Conclusion

A low exclusive breastfeeding rate is a public health problem with morbidity and mortality in infants and under-five children. Women in both formal and informal sectors face challenges balancing work with breastfeeding, which affects their ability to breastfeed exclusively for six months. However, further research is required to determine which sector has the highest prevalence rate of EBF, as no representative data is available for comparison. Sociocultural norms, family and community supports, and work-related factors such as lack of paid maternity leave and lack of breastfeeding room at work play a significant role in exclusive breastfeeding practice in both sectors. While government financial support is crucial, there is also a need to focus on protecting the rights and needs of women working in the informal sector to ensure fairness. In conclusion, the study identified barriers and facilitators to exclusive breastfeeding among working women in both formal and informal sectors. Some examples of interventions in Nigeria and Ghana, such as mass media awareness, social mobilization, workplace support, and maternity leave cash transfers, have shown potential in improving six months of EBF practice among working women in both sectors.

6.2 Recommendations

The following recommendations are made in line with the study findings to improve exclusive breastfeeding practices among working women in formal and informal sectors in Nigeria.

Government and Policymakers.

- Scaled up, strengthened, and sustained existing programs such as the Alive and Thrive project using advocacy, interpersonal communication, and social mobilization in all states and communities for a more extended period to achieve behavioural changes towards good EBF practice in working mothers. Studies have shown that perceptions and attitudes embedded in cultural beliefs hinder EBF practice among working women, and these changes require time.

- Review the laws and policies on breastfeeding related to the workplace to include both formal and informal sectors to capture those who work in small-scale, informal sectors and enact sanctions to ensure implementation at all levels of organizations and ensure universality in the policy.

- Review the maternity leave law to protect informal sectors and casual workers because they are also affected by pressure from their businesses and daily activities.

- Extend Baby-friendly hospital initiatives to all health facilities in Nigeria, including private hospitals, and baby-friendly community support is established by state governments to support the hospital initiatives.

Health system level

- Ensure Pre-service and in-service training for healthcare workers on infants and young child feeding and BHFI.

Employers

- Implement maternity laws and policies according to the national breastfeeding law and maternal protection.
- Make the workplace conducive for working breastfeeding mothers by implementing four months of paid maternity, providing necessary facilities such as a creche to make the workplace breastfeeding-friendly, and supporting them to breastfeed for six months exclusively.

Research

- Conduct more research among women in the informal sector on EBF practice to determine the prevalence and factors of EBF practices. Also, to assess the effect of lack of maternity leave affects EBF practices to have more on factors affecting exclusive breastfeeding.

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ANNEX

Table 2: Summary of the keywords search combination

AND			
OR	**Problem-related terms**	**Factors related terms**	**Geographical related terms**
	Exclusive breastfeeding	**Practices**	**Nigeria**
	Breastfeeding	**Exclusive**	**West Africa**
	Nutrition	**Working women**	**Africa**
	Infant nutrition	**Enablers**	**Low and middle-income countries**
	Infant feeding	**Barriers**	
		Determinants	**Global**
		Challenges	
		Attitude	

		Sociocultural	
		Socioeconomic	
		Maternity leave	
		Informal sector	
		Formal sector	
		Intervention	
		Mass media	
		campaign	
		Health education	
		Program	
		Law	
		strategies	

Table 4: Analysis of barriers and enablers among working mothers based on the framework

Levels of determinants	Barriers	Enablers	Intervention
Individual	• **Poor knowledge of EBF** • **Wrong perception about EBF** • **Poor attitude to EBF**	• **Younger age** • **Married** • **Low socioeconomics** • **Parity between 1-3** • **Low-income level**	• **Interpersonal communication,** • **Lactational management** • **Kenya home-based counselling**

	• **Unfavourable maternal and child health conditions** • **High socioeconomic status** **High-income level**		
Settings **At the health worker level** **At the family and community level** **At work level**	• **Inadequate health worker training,** • **Promotion of breast milk substitute**	• **Ceaserean section delivery** • **Health workers' attitude**	• **Nigeria labour law,** • **Maternity leave policy** • **Adoption of BHFI,** • **Health education and Men Engagement** • **Men Engagement**
		• **Spouse and relative support** • **Breastfeeding peer support group** • **Availability of helper** • **High husband's educational level**	

	• **Formal employment** • **Work pressure** • **Longer working hours following resumption** • **No breastfeeding places** • **Late closure from work** • **Poor electricity for storage**		
Structural	• **Sociocultural practices: Traditional removal of uvula, Practice of given water**	• **Forty days of bathing,**	• **Interpersonal communication,** • **mass media;** • **Social mobilization** • **Adoption of international marketing code;** • **Health education and**

			Men Engagement