Factors affecting Exclusive breastfeeding practices among women of childbearing age – Liberia

A thesis submitted in partial fulfillment of the requirements for the degree of

Master of Science in Public Health

By

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Declaration:

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Abstract

Introduction: Exclusive breastfeeding is still not widespread in Liberia, despite being essential for the infant's health, especially in urban areas. The employment of EBF is hampered by some factors, such as a lack of proper healthcare services, cultural customs, social inequality, and insufficient policy enforcement. This review examines the factors affecting Liberia and compares them to Ghana and South Africa to ascertain practical solutions.

Methodology: This study analyzes the literature, national policies, and exclusive breastfeeding interventions using the conceptual framework of the 2023 Lancet Breastfeeding Series. It examines the effects of integrated interventions and evaluates determinants at the mother-infant, setting, and structural levels.

Results: The findings indicate socioeconomic inconsistency, characteristics of the mother, inadequate healthcare services, a lack of proper submission to workplace conducive policy, all work against effective breastfeeding practices in Liberia. There are some excellent policies, but implementation is the problem. Because of policy accountability, investment in healthcare, and the involvement of the community, South Africa and Ghana have improved EBF rates. **Conclusion and Recommendations:** Healthcare and workplace assistance, reinforcement of policy implementation, enhanced public awareness, and lessons from the success stories of South Africa and Ghana will help in improving EBF rates in Liberia. The expansion of educational prospects and the resolution of cultural hindrances are essential for continuous positive results.

Keywords: Exclusive Breastfeeding, Mother-Infant Dyad, Cultural Beliefs, Health Policy, Maternal Health, Breastfeeding Interventions

Word Count: 11,907

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Abbreviations

ANC	**Antenatal Care**
BF	**Breastfeeding**
BM	**Breast Milk**
BSE	**Breastfeeding Self-Efficacy**
BSES	**Breastfeeding Self-Efficacy Score**
CHC	**Community Health Center**
CHO	**Community Health Officer**
CHP	**Community Health Post**
DMO	**District Medical Officer**
EBF	**Exclusive Breastfeeding**
EBFSE	**Exclusive Breastfeeding Self-Efficacy**
EIBF	**Early Initiation of Breastfeeding**
EISF	**Early Introduction of Solid, Semi-solid Food**
HCW	**Health Care Worker**
IYCF	**Infant and Young Child Feeding**
LMDC	**Liberia Medical and Dental Council**
NGO	**Non-government Organization**
PPD	**Postpartum depression**
PHU	**Primary Health Unit**
PNC	**Post-natal Care**
SSA	**Sub-Saharan Africa**

TBA	**Traditional Birth Attendant**

Key Terms

Age-appropriate breastfeeding rate: Proportion of children 0-23 months of age who are appropriately breastfed. This includes exclusive breastfeeding for infants 0-5 months and children 6-23 months who received breastmilk as well as solid, semi-solid, or soft food during the previous day (1).

Children ever breastfed rate: Proportion of children born in the last 24 months who were ever breastfed (2).

Complementary feeding: Starting to give other foods and liquids, along with breast milk, to meet the nutritional needs of the infant when breastmilk alone is not sufficient (3).

Continued breastfeeding: The child received breastmilk and timely, adequate, and safe complementary feeding for the first 2 years of life or beyond (4).

Early initiation of breastfeeding: The proportion of children 0-23 months of age who were put to the breast within one hour of birth (5).

Exclusive breastfeeding under 6 months rate: The proportion of infants 0-5 months of age who received breast milk as the only source of nourishment (but allows oral rehydration solution, drops or syrups of vitamins and medicines) (6).

Facility-based delivery: A birth occurring in a health facility of any level from the Mother and Child Health Post through the tertiary facility (7).

Introduction of solid, semi-solid, or soft foods rate: Proportion of infants 6-8 months of age who receive solid, semisolid, or soft foods (8).

Malnutrition: Deficiencies, excesses, or imbalances in a person's intake of energy and/or nutrients. I.e. undernutrition, micronutrient deficiency, overweight, and obesity. In this report, malnutrition refers to the first two kinds of malnutrition (9).

Stunting: Height-for-age exceeds two standard deviations below the WHO Child Growth Standards median. Stunting is associated with chronic malnutrition (10).

Teenager: A person between 10-19 years old (This study only included persons from 16 and above) (11).

Wasting: Weight-for-age more than two standard deviations below the WHO Child Growth Standard median. Wasting is associated with acute malnutrition (12).

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CHAPTER ONE: BACKGROUND INFORMATION

Chapter 1 provides an outline of Liberia's demographic, social, and health circumstances, which is essential to comprehending the context of nutrition for mothers and children. Public health and breastfeeding practices are significantly impacted by Liberia's issues, which include poverty, post-conflict instability, a young population, and inadequate health infrastructure.

1.0 Geographic and Historical Information of Liberia

Liberia is a coastal West African country with an estimated population of 5.48 million in 2024, and the majority are youth and women. In Liberia, women make up 50.2% of the population, while men make up 49.8%. 46.2 percent of people resided in rural areas, whilst 53.8 percent of people lived in urban centers (13). The nation is home to 16 indigenous tribes and is divided into 15 counties. Monrovia, the capital city on the Atlantic coast, is the political, economic, and cultural hub with a metropolitan population of over 2.2 million, accounting for more than one-third of the country's total population. Monrovia serves as Liberia's financial, cultural, and economic hub (13).

Liberia had a long civil war from 1989 to 2003 and a terrible Ebola outbreak from 2014 to 2016. Both of these events seriously harmed public systems and social services. These crises have left a lasting legacy, particularly in the areas of healthcare delivery, education, and economic development.

1.1 Socioeconomic Profile

Liberia is a low-income nation with substantial development obstacles. Although it varies widely by county, poverty is pervasive throughout Liberia. Rural communities like River Gee and Maryland had the greatest rates, with absolute, food, and extreme poverty all at startlingly high percentages. There is a clear urban-rural split, as seen by the lowest poverty rates found in

Monrovia/Montserrado, the most urbanized area. Grand Kru, Lofa, and Bong are among the other counties that are extremely impoverished. Although extreme poverty is often lower, most counties in Liberia have substantial levels of both absolute and food poverty overall (14). Between 2022 and 2023, the poverty rate decreased from 35.4% to 34.2% ($2.15 per person per day). In 2023, unemployment is predicted to remain at 3.7%, the same as in 2022 (15).

With a high overall fertility rate of 4.8 children per woman, the population is growing at a rate of 2.7% annually (16). The demographic profile is dominated by a young age structure, with 20% of the population being between the ages of 15 and 24 and roughly 43% being under the age of 15. The proportion of people over 55 is only around 6%. Although there is potential for economic change as a result of this youth bulge, the health and social care systems are also strained (16).

Figure 1: Map of Liberia displaying the 15 counties. (17)

1.1 Education

The education sector in Liberia is still recovering from the combined effects of Ebola and the war. Despite initiatives to increase access and enhance quality, the industry continues to encounter persistent difficulties. The estimated youth literacy rate (ages 15–24) is 54%, which is lower than the Sub-Saharan average, while the adult literacy rate is 47% (18). Hence, educated health decisions, including those regarding nutrition for mothers and children, are still hampered by illiteracy.

Six years of primary school, three years of junior secondary, three years of senior secondary or vocational training, and several types of higher education make up the educational system. Geographic disparities in access are highlighted by the concentration of the majority of higher education institutions (HEIs)—33 total—in Monrovia (19). The National Commission on Higher Education oversees quality control and accreditation.

1.2 Organizational Structure of Liberia Health Delivery Services

Under the direction of the Ministry of Health (MOH), Liberia's health system functions in a centralized, hierarchical manner. County Health Teams (CHTs), which manage healthcare at the local level, are used by the MOH to coordinate service delivery and develop policy. Clinics, hospitals, health centers, and community health posts are all part of the network that provides services. NGOs and foreign contributors are crucial to the system's operation. Healthcare is frequently provided at the community level by traditional birth attendants (TBAs) and community health workers (CHWs), particularly in rural areas (20). Regulation is handled by the Liberia Medical and Dental Council, a professional organization that guarantees basic quality requirements (21). Figure 2 depicts the organizational structure of Liberia's health delivery services.

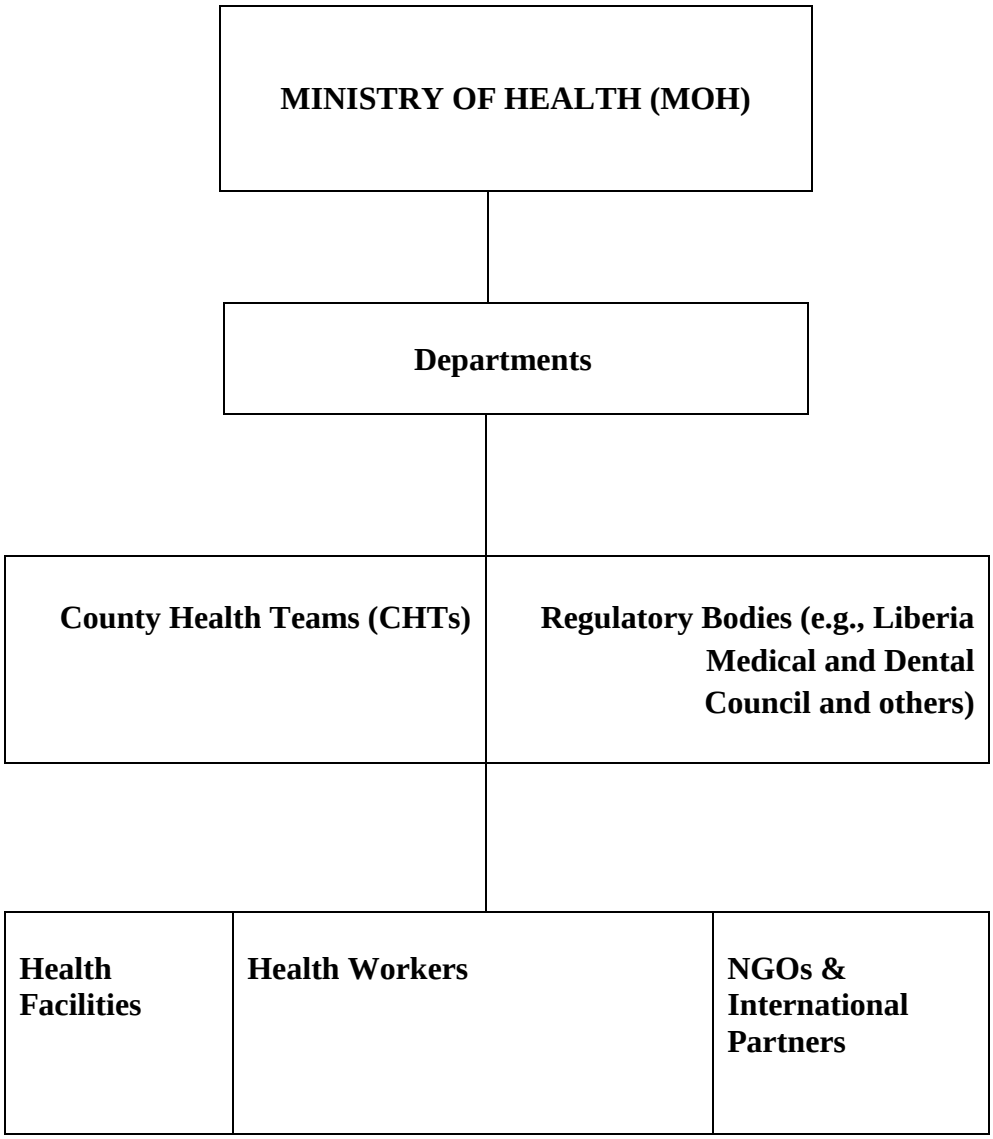

Figure 2: Diagram illustrating the organizational structure of Liberia's health delivery services.

1.3 Maternal and Child Health

The past 20 years have seen notable success in Liberia's efforts to lower the death rate for children under five. Mortality among children under five decreased by more than 70% between 1990 and 2015 (22). Maternal and newborn mortality rates, however, continue to rank among the highest in

the world, primarily due to avoidable factors such as infections, inadequate nutrition, and restricted access to professional care, particularly in rural areas.

Even with advancements, a significant portion of births still takes place outside of medical facilities, especially in rural areas. This has an impact on newborn nutrition and early breastfeeding behaviors in addition to mother outcomes.

As a result of improvements in disease prevention, access to basic healthcare, and medication, life expectancy has increased and is currently 65.1 years in 2024. Disparities still exist, nevertheless, particularly in rural and underprivileged areas (16).

CHAPTER TWO: PROBLEM STATEMENT, JUSTIFICATION, AND OBJECTIVES

Chapter 2 presents the problem statement, the rationale for the investigation, and the study's goals. It gives an overview of the particular problems or difficulties that the research addresses, explains why the study is being conducted, and establishes precise objectives and goals for the endeavor.

2.1 Problem statement

Feeding infants exclusively with breast milk for the first six months of their lives is known as exclusive breastfeeding (EBF), and it is widely acknowledged as a crucial public health strategy for lowering infant morbidity and death. Even so, less than 44% of babies under six months old worldwide are fed just breast milk (23). The UNICEF and WHO mandate that 60% of infants six months or younger receive an EBF, a goal that has only been met by 23 countries globally (24,25).

There are still major issues with mother and child health in Liberia. According to the Liberia Demographic and Health Survey (LDHS) for 2019–2020, the maternal mortality ratio (MMR) increased from 994 deaths per 100,000 live births in 2007 to 1,072 deaths per 100,000 live births (26). This is among the highest rates of maternal death in the world. High neonatal and infant death rates, which are frequently connected to inadequate breastfeeding practices, exacerbate the situation.

Although breastfeeding promotion has improved somewhat in Liberia, exclusive breastfeeding is still not the best practice. Just 55.2% of infants under six months are exclusively breastfed, which is an improvement from 36% in 2013 but still falls short of international objectives, according to the 2019–2020 LDHS (27). There are still significant differences between rural and urban locations: with a median duration of 3.2 months in rural settings against 2.7 months in urban ones, women in rural areas often breastfeed for longer than their urban counterparts (28). This disparity is still inadequate to guarantee the best possible outcomes for children's health. Malnutrition is still

a serious issue. According to LDHS (27), proper feeding practices, such as EBF, can mainly prevent the conditions of stunting, wasting, and underweight, and such adverse conditions affect about 30% of children under five in Liberia. Furthermore, according to Infant and Young Child Feeding (IYCF) guidelines, only 4.1% of children between the ages of 6 and 23 months consume the bare minimum of food that is considered adequate (29).

2.2 Justification

Several factors support the justification of this study. Firstly, evidence-based strategies are necessary due to the high rates of maternal and newborn mortality in Liberia. By preventing common childhood illnesses like pneumonia and diarrhea, exclusive breastfeeding has been demonstrated to lower newborn mortality (30). A disproportionately favorable effect can be achieved by raising EBF rates in Liberia, where access to healthcare is limited, particularly in rural and peri-urban regions.

Second, there are numerous socioeconomic factors that affect EBF practices in Liberia, but they have not yet been thoroughly examined. For instance, EBF is more common among rural women, who are frequently unemployed or working informally, whereas urban women have limited time because of work obligations and a lack of support for breastfeeding at work (31). Current health education and support initiatives seem disjointed or lacking in funding. The most vulnerable may not be reached by interventions if the underlying causes of poor EBF adherence such as structural hurdles, policy gaps, and cultural norms are not clearly understood. Although regional and international research emphasizes systemic issues like aggressive formula marketing or gender disparity in caring, Liberian-specific literature has not sufficiently examined these issues, and lastly, knowledge of maternal mental health, mother-child bonding, and family dynamics may shed light on the relative, relational, and emotional aspects that affect EBF

adherence. Even though they are frequently neglected in low-income environments, these elements are essential to promoting all-inclusive health.

A comprehensive literature analysis that looks at the political, economic, social, and technical factors that affect infant feeding choices is required to increase the percentage of exclusive breastfeeding in Liberia. By demonstrating how political regulations, economic constraints, social norms, and technological advancements affect breastfeeding practices, this method aids in understanding the interaction between macro-level structures and micro-level actions. EBF results are influenced by social, political, economic, and technological variables. Breastfeeding results are directly impacted politically by maternity protection laws, the International Code of Marketing of Breast-milk Substitutes, and maternal healthcare spending. Economic factors influencing breastfeeding affordability include household income, job uncertainty, and the informal labor market. In terms of technology, public perceptions are shaped by marketing, media exposure, and formula accessibility.

To increase exclusive breastfeeding rates in Liberia, a review of the literature that looks at social, political, economic, and technical factors is required.

2.3 Objective

2.3.1 General Objective

General Objective:

This study aims to investigate the multi-level factors influencing exclusive breastfeeding (EBF) practices among Liberian women of reproductive age and to produce evidence-based, context-specific recommendations for decision-makers, community leaders, NGOs, and healthcare professionals, using pertinent sub-Saharan African interventions as models.

Specific Objectives:

1. To comprehend how exclusive breastfeeding patterns are influenced by maternal and newborn features, such as psychological aspects and mother-infant bonding.
2. To investigate how women's decisions and abilities to exclusively breastfeed are influenced by cultural norms, community attitudes, and home dynamics.
3. To investigate how working settings, support from the health system, and access to healthcare services either facilitate or impede EBF among mothers.
4. To explore how breastfeeding practices in Liberia are impacted by structural and policy-level factors, such as national nutrition plans, labor laws, and the promotion of breast milk substitutes.
5. To draw on effective interventions from sub-Saharan African countries to co-develop implementable recommendations with key stakeholders (healthcare workers, community leaders, NGOs, and government actors) to surge EBF performance and sustainability in Liberia.

CHAPTER THREE: METHODOLOGY

The research design, methodology, data collection and analysis techniques, and conceptual framework that underpin this investigation are all presented in Chapter 3.

3.1 Methodology

3.1.1 Study Method- Literature Review

A comprehensive literature review was used in this investigation. In order to investigate the factors that influence EBF in women in Liberia, some in urban and rural areas, the objective was to compile the body of peer-reviewed research and grey literature The identification of trends, gaps,

and insights pertinent to public health intervention and policy was made possible by this approach, which was suitable given the restricted availability of recent large-scale primary data.

3.1.2 Search Strategy

Google Scholar, PubMed, and the Vrije Universiteit Amsterdam (VU) Library were among the academic databases and platforms that were searched for relevant literature. Numerous trustworthy sources, such as the Liberia Demographic Health Survey (LDHS), Government of Liberia (GOL) reports, UNFPA, UNICEF, WHO, and other NGOs, have provided information on exclusive breastfeeding (EBF) practices in Liberia, as well as databases of grey literature.

The Search Strategy Table EBF (See Appendix) is a systematic literature review that aims to investigate the experiences and behaviors of women of reproductive age, women aged 15-49, and mothers of infants aged 0-6 months. The search strategy table creates thorough and adaptable search strings for the literature review using Boolean operators, namely AND and OR. To guarantee pertinent and focused search results, these operators assist in combining various concepts from the Study Population/Domain, Determinants/Interventions, and Outcomes columns. By expanding the search within a category, OR raises the likelihood that all pertinent research will be found. By connecting demographic groups with certain factors and outcomes, AND refines the search across categories. A variety of studies addressing related populations, determinants, and outcomes are captured by combined usage, which enables both thorough coverage and targeted attention. The quality and comprehensiveness of the evidence synthesis on EBF are ultimately strengthened by this systematic methodology, which also helps to decrease irrelevant results, prevent missing pertinent studies, and make sure the literature review is methodologically sound and replicable.

The study focuses on low-income women and breastfeeding moms in urban Liberia, where EBF rates are often lower. The table also lists the expected results associated with different determinants and interventions, aiming to identify variables affecting the start and maintenance of EBF, how breastfeeding practices and maternal understanding have improved, how returning to work affects nursing habits, and how national EBF rates are affected at the policy level. The study evaluates EBF practices among women of reproductive age in urban and rural locations, using the snowballing method and case studies from other African countries with similar socio-cultural and healthcare conditions.

3.1.3 Inclusion Criteria

The study materials will only include papers released in 2013 or later. This time frame makes sense given the paucity of comprehensive scientific research on the topic at hand in Liberia. The study will give priority to peer-reviewed literature. The only language utilized for searches will be English. This search approach ensures comprehensive coverage of the topic by locating relevant publications, including relevant information from the Ministry of Health of Liberia (MOH), that discuss the practices of exclusive breastfeeding (EBF) among women in Liberia's rural and urban areas through the use of peer-reviewed journals, reports from reputable organizations, and the snowballing technique.

Justification for Comparative Country Inclusion: The methodology included a comparative dimension that draws on well-established exclusive breastfeeding (EBF) interventions from nations with comparable socioeconomic and health system issues, mainly Ghana and South Africa, in order to put Liberia's experience in perspective. These nations were chosen because of their proven ability to raise EBF rates through organized national interventions, the availability of community-based, policy-level, and health-system initiatives that have been assessed in peer-

reviewed literature, and the applicability of their respective contexts to Liberia, including common issues like employment patterns, cultural breastfeeding norms, and urban-rural health disparities. This comparative method supports the study's goal of learning from regional best practices in addition to identifying obstacles and enabling factors unique to Liberia.

To create insightful comparisons and support evidence-based recommendations, intervention data from these nations were thematically examined and cross-checked with Liberia's findings.

3.1.4 Exclusion Criteria

This study excluded all publications published before 2013, studies that are not relevant to EBF, studies with inadequate methodological rigor, and all articles written in other languages. The only exception is the 2023 Lancet Breastfeeding Series framework, which has significant value to the analysis of EBF in Liberia.

3.1.5 Study Areas

The target groups whose experiences and actions pertaining to exclusive breastfeeding (EBF) will be investigated are identified in this column. To provide inclusive and thorough coverage, the populations are specified in a variety of ways. These comprise women who are of reproductive age, which is a broad demographic that is pertinent to maternal health, and women who fall within the typical demographic health survey categories of 15–49 years of age. The primary group directly involved in EBF practices is mothers of infants ages 0–6 months. Additionally, the investigation looks at socioeconomic gaps by concentrating on low-income women and breastfeeding mothers in urban Liberia, where EBF rates are often lower. Lastly, mothers in sub-Saharan Africa are thought to provide a basis for comparing and analyzing effective treatments from nearby contexts.

3.1.6 Analysis of Data

In order to identify recurrent themes and ideas in the literature, a thematic content analysis was performed (32). The conceptual framework's multi-level determinants served as the basis for organizing the data. These include:

- Individual-level (mother's beliefs and knowledge, for example)
- The community and family (e.g., cultural norms, spousal support)
- The healthcare system, including nurse education and service accessibility
- At the policy and structural level (e.g., public health initiatives, maternity leave)

The literature was coded using a matrix that connected the domains of the conceptual framework, objectives, and findings.

3.1.7 Ethical Concerns

Despite the absence of primary data gathering, ethical research requirements were maintained by relying exclusively on reports that were published and made available to the public, using accurate citation to acknowledge all sources, and keeping data from being manipulated or misrepresented.

3.2 Conceptual Framework

In order to guide this research, the 2023 Lancet Breastfeeding Series Framework (33) was selected above other widely used models, including Andersen's Behavioral Model, the Socio-Ecological Model (SEM), and the Health Belief Model (HBM).

Rationale for selecting the framework: In contrast, the Lancet framework incorporates the levels of the individual, community, health system, and structure/policy. Thus, it was more in line with the multifaceted goals of the study and the intricate nursing situation in Liberia (33).

The framework takes into account a variety of individual characteristics that have a direct impact on a mother's capacity to breastfeed. These include the level of education of the mother, her general health, difficulties during lactation, and mental health issues like anxiety or postpartum depression. Understanding these factors is crucial because they impact the ability to start and maintain EBF as well as the motive behind it (33).

The significance of supportive environments and high-quality services is emphasized at the community and health system levels. It highlights the training and attitudes of healthcare professionals like nurses and midwives, as well as the importance that social networks and families play in promoting breastfeeding. EBF success is also thought to be greatly facilitated by the standard of maternal care and the availability of lactation support or breastfeeding counseling in medical institutions (33).

The approach addresses broader systemic and policy-related factors at the structural and regulatory level. This includes workplace accommodations for breastfeeding, the effects of aggressive marketing of breastmilk substitutes, the effectiveness and implementation of maternity protection laws, and prevalent cultural norms that may encourage or discourage EBF. These structural factors are crucial targets for advocacy and intervention because they influence the larger context in which decisions about breastfeeding are made (33).

The Lancet Breastfeeding Framework provides a comprehensive perspective for examining and resolving the intricate, interconnected elements that affect EBF practices by combining these three categories.

Policy and Practice Implications: The framework guides stakeholders in creating all-encompassing, evidence-based strategies to support and improve breastfeeding practices in Liberia

by encompassing these diverse and interacting elements and offering a thorough understanding of the factors influencing breastfeeding.

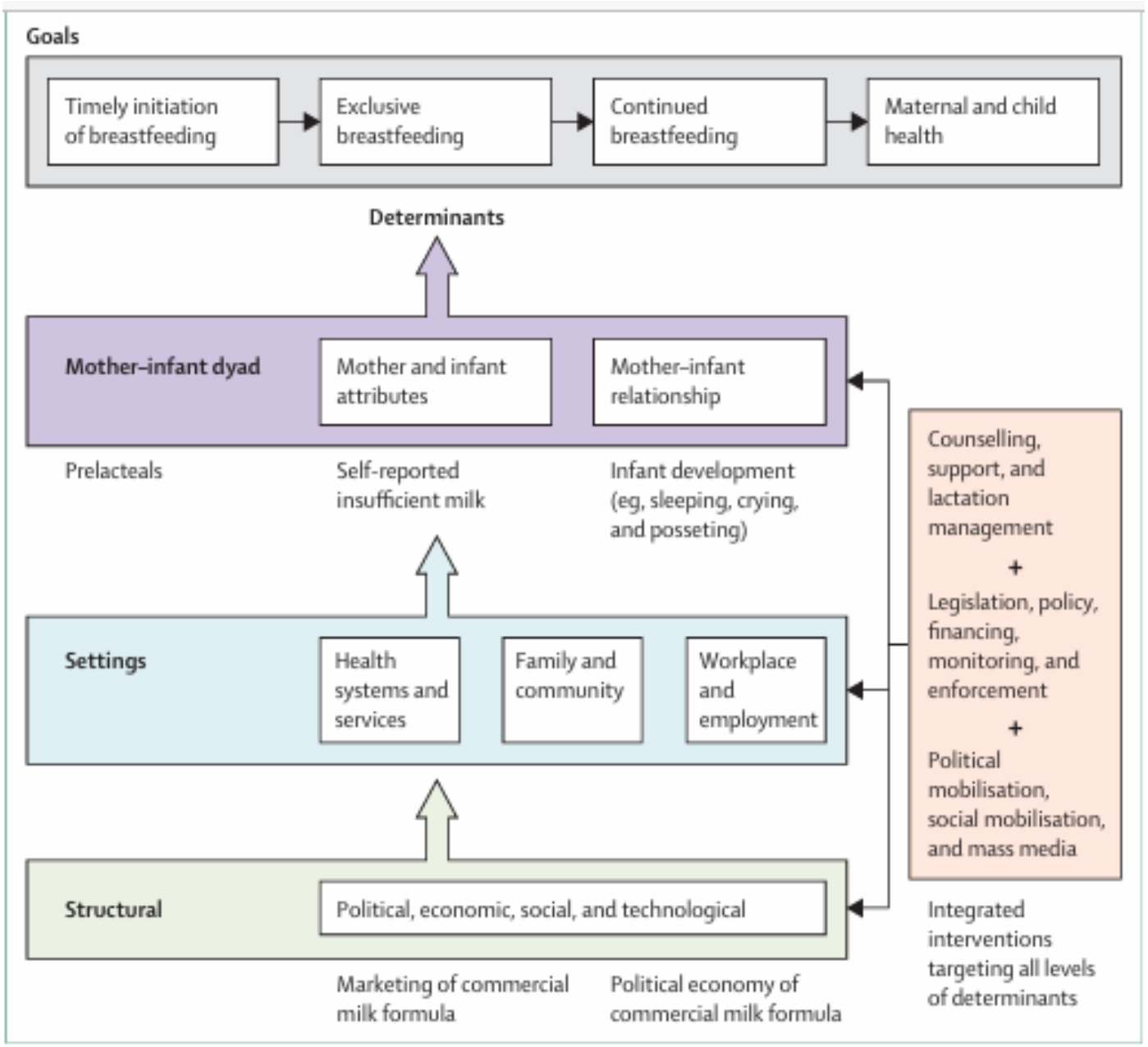

Figure 3: The 2023 Lancet Breastfeeding Series framework. (33)

CHAPTER FOUR: RESULTS

The study's results are presented in Chapter 4 and are divided into different components that affect EBF in line with the 2023 Lancet Breastfeeding Series framework. These comprise elements related to the goals associated with EBF, determinants that influence the success of EBF, and a range of interventions that positively impact the effectiveness of EBF. According to the study's aims, each subsection investigates how these factors affect exclusive breastfeeding**.**

4.1 DETERMINANTS IMPACTING EXCLUSIVE BREASTFEEDING

4.1.1 Mother-Infant Dyad

Factors such as mental health, lactation structure, mother and child health, and nursing difficulties have a substantial impact on exclusive breastfeeding practices (EBF) in Liberia, both in urban and rural areas.

4.1.1.1 Mother and Infant Attributes

Maternal Age: In Liberia, exclusive breastfeeding (EBF) practices can be significantly influenced by the age of the mother. Younger women may find it challenging to adopt EBF because of economic constraints, low levels of education, and limited access to healthcare (37). However, older mothers may be more likely to adhere to the EBF requirements due to their enhanced access to resources and information, as well as the increased support of their social networks (37). Meanwhile, the precise effect of age on EBF can differ based on personal circumstances and community cultural elements. Table 2 below, highlights different characteristics of mothers and newborns in Sub-Saharan Africa by displaying the EBF rates among infants under six months.

An additional study done by Issaka et al. covering six regions of Liberia indicated (37) that, as compared to older mothers, younger mothers in Liberia—more specifically, those between the

ages of 15 and 24—are more likely to introduce solid, semi-solid, or soft foods at an earlier age, which translates into comparatively lower EBF. Mothers between the ages of 35 and 49 had the lowest percentage of likelihood of introducing solid, semi-solid, or soft foods at an earlier age, indicating a higher rate of EBF than younger women (37).

This is corroborated in a study done relative to Sub-Saharan Africa by Yalcin et al., 2016, which included Liberia. It was observed that age groups that were more likely to practice exclusive breastfeeding (EBF) were those 35 years of age and older (35.6%), 25–29 years of age (36.7%), and 30-34 years of age (38.8%). The age groups with lower EBF practices were those aged 15–19 (33.3%) and 20–24 (34.9%) in Table 1. Table 1 shows data on exclusive breastfeeding (EBF) by mother's demographic and socioeconomic variables for infants under six months of age in the SSA. One explanation for the outcome was that younger mothers might not have had the training to undertake safe infant feeding as compared to young mothers, (15–19 years old), higher maternal ages (35–49 years old) were linked to a higher likelihood of EBF practice in ECOWAS countries, including Liberia (38).

Table 1. Percentages of EBF among infants ever breastfed and under 6 months of age by maternal demographic and socioeconomic characteristics in Sub-Saharan Africa of women aged 15–49 for respective countries.

Characteristics	***Total***		***Exclusive breastfeeding, %***
	n	**%**	
Mother's age, years			

15–19	3379	13.5	33.3
20–24	6682	26.6	34.9
25–29	6457	25.7	36.7
30–34	4521	18.0	38.8
≥ 35	4045	16.1	35.6
Mothers education			
No education	11 582	46.2	32.1
Primary	8542	34.1	42.3
Secondary and above	4957	19.8	33.6
Mothers working status			
Working (past 12 months)	15 118	60.3	37.4
Not working	9948	39.7	33.8
Type of place of residence			
Urban	6653	26.5	33.1
Rural	18 431	73.5	36.9
Delivery place, assistance, and type			
Home-Unskilled assistance	10 255	41.1	33.1
Home-Skilled assistance	622	2.5	27.8
Health facility-Vaginal delivery	13 156	52.7	38.9

Health facility-Caesarean section	936	3.7	49.3
Birth status			
Single birth	24 699	98.5	36.2
Initiation of breastfeeding			
Greater than 1 h	11 534	46.1	30.7
Within 1 h	13 492	53.9	41.6

4.1.1.2 Mother-Infant Relationship

For both the mother's and the baby's health, breastfeeding offers numerous advantages (39). Furthermore, the benefits of nursing for the mother-child connection have been linked to specific underlying neuro-hormonal pathways. It has been specifically proposed that the hormones oxytocin and prolactin, which control nursing, influence certain brain areas that facilitate protective and social behaviors in mothers, such as connection to the infant, social memory, and recognition (39). Active bonding during nursing has been demonstrated to be the healthiest option in this regard; this emphasizes the significance of nonexclusive breastfeeding with active bonding (40).

When mothers are unable to breastfeed despite their best efforts due to external factors like low milk production, mastitis, breast surgery, or other circumstances, this decision has significant emotional consequences for them, including feelings of guilt and emotional suffering regarding how they perceive themselves as mothers (41,42). Researchers have found that how sensitive a mother thinks she is to nursing affects her ability to keep up the habit and especially for first-time mothers. The mother's confidence and perseverance in nursing can be greatly impacted by her

feeling of maternal sensitivity, which is her awareness of and reaction to her baby's cues and demands (43). These views have a particularly negative impact on new mothers, who could feel more nervous or unsure about their capacity to recognize and react appropriately to their infant's cues. According to research, a woman is more likely to feel capable and dedicated to continuing to breastfeed despite difficulties if she feels that she is perceptive and aware of her infant's demands. In contrast, mothers who are less sensitive or who are uncertain about their capacity to detect comfort and hunger cues may be more likely to stop nursing early and switch to formula or mixed feeding (43).

The link between perceived sensitivity and breastfeeding persistence emphasizes the value of education and support networks for new mothers since they can boost their sense of self-efficacy. There is a greater chance of successful, long-term exclusive breastfeeding when first-time mothers feel more capable and secure in their ability to respond to their baby's demands.

Additionally, the effects of vaginal birth on nursing and maternal sensitivity were discovered as well. As part of maternal sensitivity, maternal behaviors directed at the infant, such as talking to them while feeding (active bonding), seemed to be linked to a positive emotional relationship and decreased levels of somatization (when children were 6 years old) (40).

However, empirical evidence linking nursing to mother-infant attachment has not been sufficiently supported by studies related to breastfeeding mothers in Liberia (39).

Mental Health: One serious mental illness that can have detrimental short- and long-term effects on a child's development is postpartum depression (PPD) (44,45) mothers who exhibit symptoms of PPD reduce their practice of EBF (45). This is confirmed by Thome et al. (46) in a study that revealed that the mother's depressed symptoms decreased EBF. The authors concluded that

although the correlation between EBF and PPD varies across studies, it was less common in mothers who were depressed (45).

Mental health has a big impact on breastfeeding. Urban living can lead to stress and postpartum depression, whereas rural mothers can get depressed and anxious from being alone and not having enough support. Research data is however unavailable relative to the effect of mental health on breastfeeding mothers in urban and rural Liberia.

4.1.2 Settings

This parameter integrates how employment variables, family and community cultural norms, and health system resources affect the adherence to exclusive breastfeeding.

4.1.2.1 Health Systems and Services

Pregnant women in Liberia who give birth at public health institutions and receive prenatal care services have higher rates of exclusive breastfeeding
(47).

Maternal and Infant Health: Breastfeeding practices are significantly impacted by the health status of the breastfeeding mother and the child (48). There are better healthcare services for breastfeeding mothers in urban parts of Liberia than in rural parts, where healthcare facilities are inadequate. Mothers in urban terrains regularly receive appropriate prenatal and postnatal attention, a positive factor for enhanced EBF. Conversely, in rural areas, limited access to healthcare services can adversely affect maternal health (37). Infant health also affects breastfeeding practices. Infants in urban areas are more likely to benefit from better healthcare services, such as immunization and consistent neonatal checkups, (38) which are beneficial to

EBF. Breastfed children in rural terrains are susceptible to health problems due to limited healthcare facilities, negatively impacting EBF practices (49).

Physiological lactation components are essential for the effectiveness of EBF. While mothers in rural Liberia frequently lack the resources to resolve lactation concerns and reduce breastfeeding rates, mothers in urban areas have access to support networks (37,50).

The study examines the prevalence and contributing factors of early introduction of solid, semi-solid, or soft foods (EISF) in infants between the ages of three and five months in Ghana, Liberia, Nigeria, and Sierra Leone, four Anglophone West African nations. With an emphasis on Liberia to underscore factors impacting early food introduction, it specifically aims to uncover individual, household, and community determinants linked to EISF practices.

Data from recent Demographic and Health Surveys (DHS) for each nation are used in this cross-sectional analysis. Utilizing data from the Demographic and Health Surveys (DHS) and multistage stratified cluster sampling, which is intended to generate nationally representative samples, it uses multiple logistic regression analyses to investigate relationships between different determinants (at the individual, household, and community levels) and early food introduction in infants. A total of 2447 newborns from the four nations were included in the study, with a focus on those who were 3–5 months old and living with their mothers. In particular, 263 babies from the 2007 DHS made up the sample size for Liberia, which was weighted to produce representative findings.

The study in Liberia looked at six regions: Monrovia, North Western Liberia, South Central Liberia, South Eastern Liberia, another part of South Eastern Liberia, and North Central Liberia. The results showed that 33.9% of babies born at home were introduced to solid, semi-solid, or soft foods early (with an EBF rate of 66.1%), while only 27.1% of babies born in medical facilities were introduced to these foods early (with a higher EBF rate of 72.9%) (Issaka et al., 2014).

The timely introduction of solid, semi-solid, or soft foods to 3- to 5-month-old Liberian infants is greatly impacted by delivery support. And also, because they receive higher health knowledge. Infants delivered by medical professionals have the lowest early food introduction rate (25.9%), indicating better adherence to EBF standards according to Issaka et al., 2014. In furtherance, the highest early food introduction rate (34%), which indicates less adherence to recommended feeding practices, is the result of traditionally assisted birth attendants in deliveries.

This study showed that infants born via cesarean section were more likely to be introduced to foods early (44.9%), compared to those born vaginally (30%), which suggests that cesarean deliveries may pose challenges to exclusive breastfeeding (37). Because postnatal care and educational resources are more readily available in medical settings, infants delivered at home are more likely than those delivered in hospitals to be exposed to solid or semi-solid foods earlier, leading to a decrease in the percentage of babies who are exclusively breastfed (51).

Early food introduction occurred in 29.8% of breastfeeding mothers, resulting in a decrease in EBF, of infants delivered by other untrained provider (37). The early introduction of solid foods is more common in infants delivered by untrained persons or traditional birth attendants than in infants supported by medical professionals, (52,53). This is more common in rural regions than urban areas such as Monrovia. This might be due to the disparities in these groups' educational attainment and adherence to newborn feeding recommendations (37).

Prenatal clinic visits can have a beneficial or negative effect on exclusive breastfeeding. 52.0% of mothers who had one or more prenatal visits in the studied Liberian regions (Monrovia, North Western Liberia, South Central Liberia, South Eastern Liberia, another part of South Eastern Liberia, and North Central Liberia.) introduced solid foods early, compared to 26.9% of mothers who did not attend any prenatal clinics. Lower exclusive breastfeeding rates were associated with

mothers who attended one to three prenatal visits, as they had the greatest rate (31.6%) of early solid food introduction. However, the rate of early food introduction was lower (22.0%) among mothers who had four or more prenatal visits, which may indicate an improvement in exclusive breastfeeding. This highlights the potential advantage of receiving quality prenatal care in terms of enhancing compliance with suggested newborn feeding habits, such as exclusive breastfeeding (37).

Another study done by Soumah et al. (54) and associates in Guinea provided further evidence supporting this finding. Compared to women who gave birth at home, those who gave birth in a medical institution had a 94% higher likelihood of exclusively breastfeeding their child.

4.1.2.2 Family and Community

A mother's partner, grandparents, traditional birth attendants, and medical professionals are some of the people who have an impact on her decision to breastfeed. Due to their engagement in daily child care, husbands frequently have a bigger influence than grandparents. The relative importance of each figure varies based on social status, closeness, and exposure to health promotion. Due to the prevalence of home deliveries and the lack of prenatal checkups, moms rarely engage with health professionals, which limits their ability to offer accurate information (55,56).

Mothers have a great deal of influence over what their children eat, according to 99.3% of households surveyed in Lofa County's Voinjama District (57). While mothers decide when to start breastfeeding, fathers have more say in decisions about when to introduce new meals, according to 86.6% of women surveyed in Lofa County, Liberia (57). Mothers-in-law and other extended family members do not influence what children eat. This emphasizes how important mothers are in determining the nutritional needs of their offspring in this area in terms of child feeding patterns.

Figure 4 depicts the distribution of decision-making authority among mothers, fathers, aunts, and mothers-in-law (57).

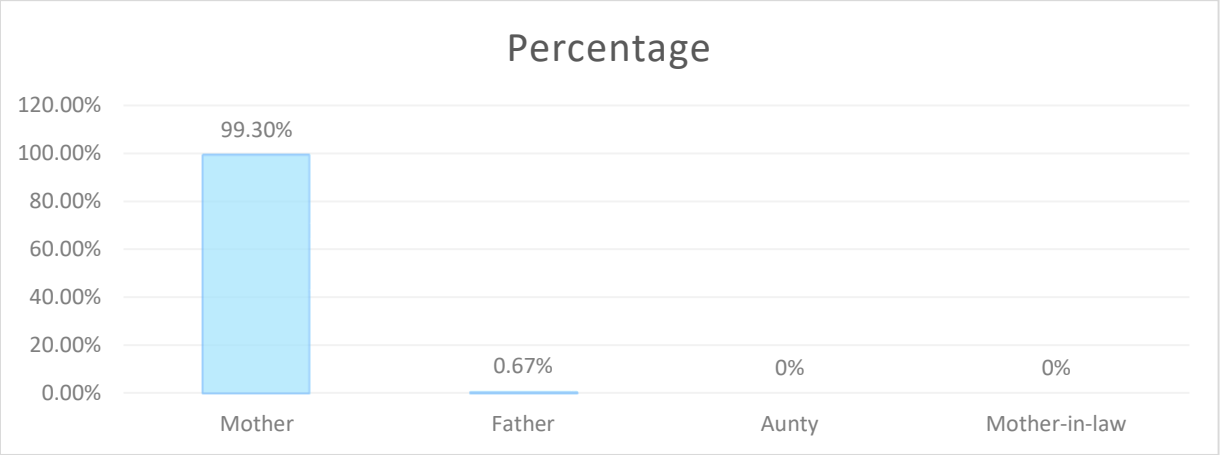

Figure 5: The person who influences the type of food that should be given to the child in the household, Voinjama District, Lofa County, Liberia.

Mothers have the biggest impact on the kind of food that should be offered to the child in the home, according to Figure 5, which displays the percentage influence of various family members. The information shows that... 99.3% of the influence is from the mother. At 0.67%, fathers have very little influence. Mother-in-law and aunt have little impact. According to this statistic, moms have nearly all of the influence in the context being assessed, fathers play a very small part, and aunts and mothers-in-law have no impact at all. The graphic doesn't say exactly what the context is, but considering the larger conversation, it might have to do with choices about child care or baby feeding.

Cultural Norms: According to Kumeh et al. (47), widespread cultural beliefs impact exclusive breastfeeding. Colostrum is the first form of milk produced immediately after birth and is very nutritious and rich in antibodies. Colostrum was viewed by women in Liberia as dangerous and

even lethal for unborn children (47). Some mothers explained that to protect their children from colostrum that they consider unsafe for their babies, they delayed starting breastfeeding far longer than the advised one hour after delivery. Mothers who think that their infants need to drink water or other liquids to stay hydrated, for example, are less likely to breastfeed their child exclusively (58).

It has been observed that breastfeeding ideas across many social groups indicate certain common and distinctive ideologies related to EBF and newborn feeding. According to a paper by Oyelana et al., traditional African culture has long held the view that BF is the standard method for nourishing infants (Oyelana, Kamanzi, and Richter, 2021). African mothers believed BF created a strong link between mother and child before EBF was promoted. Furthermore, a common African belief is that breastmilk (BM) can bring good fortune or bad luck, which is why expectant moms proudly look forward to breastfeeding.

4.1.2.3 Workplace and Employment

A woman's ability to exclusively breastfeed can be negatively affected by full-time employment if she lacks maternity leave, works long hours away from home, participates in heavy labor, or is deprived of workplace rights like breastfeeding breaks, as illustrated by a study in Liberia (47). Compared to women in formal employment, those who self-identified as housewives or jobless were more likely to practice EBF (60,61).

A study carried out in Maryland County, a rural region indicated that several mothers mentioned the financial strains they bear as the main providers of care and income for their families (47). Many women in the area felt it was impractical to breastfeed exclusively for six months due to societal constraints and financial obligations. Mothers frequently turned to early supplemental feeding because they lacked stable employment, paid time off, childcare, housing, and support for

their growing children. The necessity of sporadic, informal work caused them to spend a lot of time away from their children, especially in cities, making it difficult for them to breastfeed (47). This may be related to the demands of an urban lifestyle, the greater work rates of mothers, or the easier availability of a wide range of foods and medical services that support or encourage early weaning (62–64). The lowest number, 4.3%, is found in the rural North Western region, suggesting that early food introduction is far less common there (37). This indicates that 95.7% of such rural dwellers practiced EBF (Table 2).

Table 2 describes the relationship between working and non-working breastfeeding mothers and the impact on EBF in six regions of Liberia.

Compared to mothers who are not employed (22.5%), a greater proportion of working mothers (35.5%) introduced solid, semi-solid, or soft foods at an earlier age. This indicates that 77.5% of unemployed breastfeeding women practiced EBF, while 64.5% of employed breastfeeding women practiced EBF (37). To make sure their children are fed while they are away, working women might start introducing extra foods sooner. Monrovia has the highest rate of early food introduction at 51.3%, with only 48.7% practicing EBF (Table 2). The high rate of early food introduction in Monrovia is caused by improved access to processed foods, increased exposure to promoted food products, and a lack of healthcare recommendations on exclusive breastfeeding (EBF). Other urban socioeconomic challenges include the absence of breastfeeding support for working women. Parents who believe solids are better for their infants offer them sooner because to cultural views and a lack of emphasis from healthcare practitioners on the advantages of EBF.

Table 2: Early introduction of solid, semi-solid food for infants 3-5 months old based on Liberia's individual, household, and community characteristics, 2007–2013.

CHARACTERISTIC	LIBERIA % (EARLY INTRODUCTION OF SOLID, SEMI-SOLID FOOD)
MOTHER'S WORK STATUS	
NON-WORKING	22.5
WORKING (PAST 12 MONTHS)	35.5
GEOGRAPHICAL/ADMINISTRATIVE REGION	
1 MONROVIA (LIBERIA)	51.3
2 NORTH WESTERN (LIBERIA)	4.3
3 SOUTH CENTRAL (LIBERIA)	37.1
4 SOUTH EASTERN (LIBERIA)	28.7
5 SOUTH EASTERN (LIBERIA)	18.5
6 NORTH CENTRAL (LIBERIA)	28.8

Variability can be seen in the South Central (37.1%), two South Eastern (28.7% and 18.5%), and North Central (28.8%) regions of Liberia. Local customs, social disparities, and influences from

both urban and rural settings contribute to regional variations in EBF patterns, indicating a combination of traditional and modern elements influencing dietary behaviors (37).

A study done in Sierra Leone by van Breevoort confirmed that farming negatively impacted EBF. While most of the women who were interviewed said that EBF is feasible while working, some of the participants mentioned that breastfeeding exclusively presents challenges for women who farm. Some of them as a result of farming; while the baby is in the hut, they will be occupied working on the farm, leaving them with little time to sit and breastfeed (65). So, to give them time to work on the farm, they often feed them solid or semi-solid foods. Breastfeeding farm laborers also find it difficult to return to their huts often to breastfeed; hence, they give their babies hot water to help them sleep so that mothers may spend more time in the fields. Some mothers begin weaning their infants at two months of age and giving them porridge prepared from milled rice and sun-dried before boiling (65). While these findings provide valuable insight into the potential effect of farming practices on EBF, there is currently no data on how farming impacts EBF among nursing mothers in Liberia, warranting further investigation.

4.1.2.4 Structural Determinants

Political, Economic, Social, and Technological Factors: The broader socio-political and economic environment, including the marketing practices of commercial milk formula, plays a substantial role in shaping breastfeeding behaviors in Liberia.

Information relative to the impact of market and policy environment on EBF in Liberia is unavailable. However, some studies connected advertisements for breast milk substitutes and prelacteal feeding to the exclusive breastfeeding practice (66). There is evidence that fewer people are exclusively nursing due to environmental factors, including the successful marketing of breast

milk substitutes (67). However, the impact of environmental factors on EBF in Liberia is unavailable.

Sanitation and water are interconnected with the social and local networks. Compared to breastfeeding mothers without family assistance, those who receive help with domestic chores—especially fetching water—from their spouses or other household members have more time to devote to nursing their infants (68). Moreover, there is a relationship between socioeconomic status and water and sanitation, as breastfeeding mothers with higher socioeconomic status have better access to water services in their homes than households with lower socioeconomic status (69).

The study found that 36.6% of neonates in Liberia use unprotected water, and 63.5% of infants have access to safe water. Ghana has the lowest percentage of unprotected water usage (19.5%) and the highest access to protected water (80.5%). Both Sierra Leone and Nigeria use less protected water—47.3% and 43.3%, respectively—and more unprotected water—52.7% and 56.7%, respectively (37). According to these statistics, there are notable discrepancies between Ghana and Sierra Leone in terms of newborns' access to protected water; these variances can be attributed to variations in infrastructure, public health policy, and socioeconomic factors. However, the research did not establish a correlation between the quality of water sources and EBF in these countries, including Liberia.

The timing of providing solid, semi-solid, or soft foods to infants aged 3-5 months in Liberia is influenced by their socioeconomic position. 30.4% of early food introductions occur in lower-class settings, most likely as a result of women having to return to work early or not having access to nursing support because of financial constraints (37). Because middle-class households have access to better resources for breastfeeding, their percentage is slightly lower, at 27.5%. At 44.1%,

wealthier households have the greatest percentage; this may be due to their ideas about nutrition and access to a wider choice of foods (37).

Additionally, breastfeeding mothers who are farmers are affected by poverty, especially agricultural mothers were found to have lower EBF according to (47). Furthermore, Health experts observed that breastfeeding consistency is hampered by the fact that women from lower socioeconomic backgrounds frequently leave their infants at home or with neighbors to farm in remote places (47).

Attitudes: According to research, mothers' lifestyle decisions have a detrimental effect on exclusive breastfeeding (EBF). In a study by O.W. Kumeh colleagues in Maryland County, Liberia, certain nursing women's lifestyle choices impact EBF, negatively (47). Many mothers' reasons for not breastfeeding exclusively included returning to school or starting a new career. This led to irregular nursing and extended absences, which in turn caused a drop in EBF practices (47).

According to a study conducted in Nigeria by O. A. Lawal and S. E. Duma, EBF was negatively impacted by concerns about sagging breasts and looking older (70). Similar patterns are observed among younger mothers in Liberia, despite the paucity of particular research on this topic.

Skills: Education is a crucial component of a person's life. It has an impact on a person's knowledge, attitudes, and behaviors. For example, educated women are more knowledgeable about EBF and its importance and have also more access to information on breastfeeding and childcare practices than uneducated mothers (71).

Lifestyle variables also have an impact on a mother's age; younger women are less likely than older women to exclusively breastfeed their babies due to potential inexperience (72). A mother's

level of education affects her lifestyle. Breastfeeding mothers with a higher level of education are more committed and convinced of the importance of EBF. Compared to others with less education, they are more likely to have access to breastfeeding information, lead a healthy lifestyle, and provide breast milk to their infants, benefiting the child's health. (73).

According to research, a mother's educational attainment has an impact on the feeding habits of her 3- to 5-month-old child in Liberia (37). According to Figure 4, 70.7% of mothers who did not have formal education practiced exclusive breastfeeding (EBF), with 29.3% of them introducing solid, semi-solid, or soft meals. The percentage of early food introduction rises to 31.3% for moms with only primary education, bringing the EBF rate down to 68.7%. With an EBF rate of 63.5%, mothers with at least a secondary education have the greatest rate of early food introduction (36.5%) (37). Therefore, compared to moms with little to no education, women in Liberia who have greater levels of education are more likely to offer supplemental foods earlier, which lowers EBF rates.

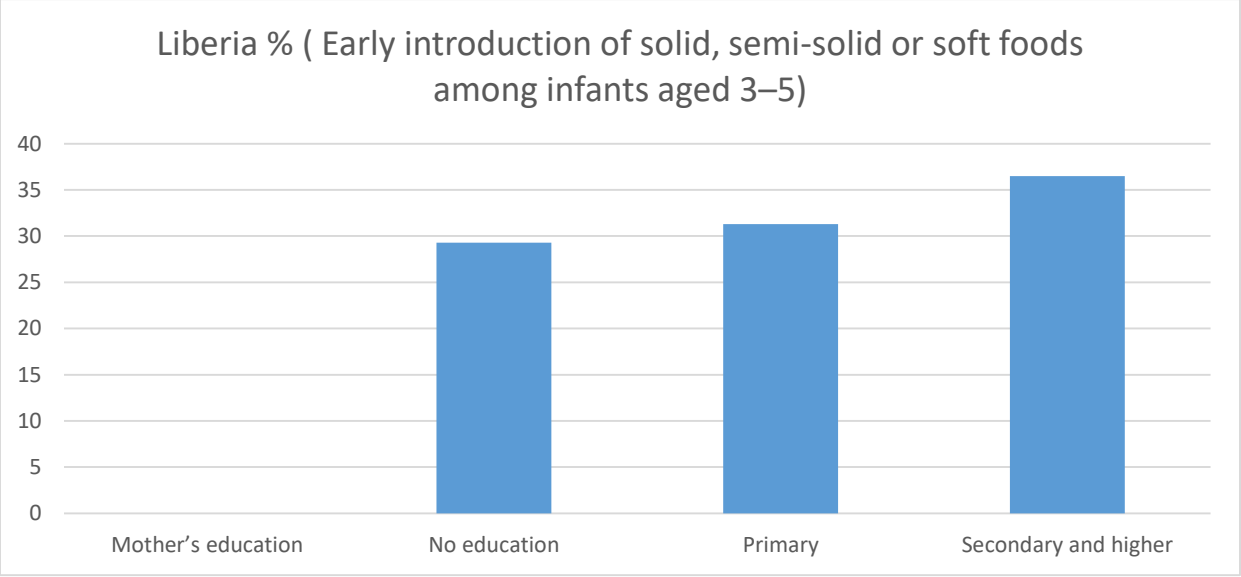

Figure 4: Early introduction of solid, semi-solid, or soft foods among infants aged 3–5 months by breastfeeding mothers based on their level of education in Liberia. (37)

4.2 Interventions

Interventions at different support levels are necessary to improve baby feeding practices. To encourage mothers to continue exclusive breastfeeding (EBF), counseling, support, and lactation management offer advice on nursing and dealing with obstacles. Through supportive policies like maternity leave and restrictions on the marketing of formula, legislation, policy, financing, monitoring, and enforcement ensure that regulations are implemented effectively and foster breastfeeding-friendly environments. Leaders, communities, and the media are involved in political, social, and mass mobilization efforts to raise awareness of EBF and foster cultural acceptance. By addressing both structural and human barriers, these treatments work together to create circumstances that encourage women to practice EBF for the best possible health of their infants.

4.2.1 Counseling, Support, and Lactation Management

In Liberia, it is crucial to give breastfeeding mothers specialized education and support. This involves practical lactation management, emotional support to help mothers overcome breastfeeding obstacles and prenatal and postoperative counseling. Through these therapies, mothers can gain the skills and self-assurance necessary to start and maintain EBF. A life cycle approach that prioritizes provision starting from preconception through the postnatal phase positively impacts EBF, ensuring that involvements are adapted to breastfeeding women's provisions at every stage. Women expecting to give birth to newborns gain assurance and understanding through in-depth education and counseling during preconception and prenatal care. Primary breastfeeding accomplishment is improved when trained support is delivered during childbirth and the postoperative period following the Baby-Friendly Hospital Initiative (BFHI) standards. However, additional information relative to this issue is not available.

Mothers' attitudes and knowledge on exclusive breastfeeding (EBF) might be positively impacted by the assistance offered by healthcare professionals and community education initiatives. Mothers are more likely to comprehend the advantages of EBF for both maternal and newborn health when healthcare professionals actively counsel them and offer helpful advice. (74). Campaigns for community education can aid in increasing awareness by dispelling myths and cultural preconceptions that could deter EBF. Higher rates of exclusive breastfeeding result from mothers' increased confidence in following advised breastfeeding methods due to the combined backing of reputable medical practitioners and easily available community services. (74).

4.2.2 Legislation, Policy, Financing, Monitoring, and Enforcement

Enacting and upholding laws that favor breastfeeding in Liberia fosters a conducive environment for breastfeeding mothers (75). This entails offering sufficient maternity leave, ensuring that breastfeeding facilities are made available at work, and keeping an eye on the legislation that supports breastfeeding. Adequate funding and stringent implementation strategies are required to guarantee the efficacy and adoption of these regulations (75).

Legislation and Policy: Enacting laws and policies that are appropriate to support breastfeeding practices and provide the environment needed for mothers to nurse their infants exclusively for the necessary six months. Even while national and international policies have a good impact on EBF, there are still obstacles that need to be removed to guarantee their effectiveness (76,77).

National Policies and Programs: The Liberian government developed some policies and programs to increase EBF in both urban and rural parts of the country. Hence, the World Health Organization (WHO) and UNICEF reinforced the implementation of Liberia's National Nutrition Policy, which underscored the serious role that exclusive breastfeeding plays in enhancing children's health and lowering infant mortality (57,78). Policies to promote exclusive breastfeeding

(EBF) rates must include public health initiatives and education campaigns aimed at nursing moms and healthcare professionals (76). These programs concentrate on giving medical professionals the information and abilities they need to give mothers consistent, research-based guidance. Public health initiatives that teach healthcare professionals guarantee that they can properly handle breastfeeding difficulties, dispel myths, and provide individualized support—all of which are essential for moms thinking about or using EBF (77).

These initiatives give mothers easy access to information about the nutritional, immunological, and developmental benefits of EBF for both mothers and infants. To raise awareness and mainstream EBF practices in a variety of cultural contexts, education campaigns frequently make use of media, workshops, and community outreach. These initiatives are important because they target social norms and debunk myths that might deter exclusive breastfeeding (77).

Furthermore, governments can create a breastfeeding-supportive environment with organized funding, oversight, and ongoing development by incorporating such initiatives into policy. A complete support network for nursing moms is established by policies that give priority to these educational interventions, which eventually raises EBF rates and enhances newborn public health outcomes (24).

The goal of Liberia's exclusive breastfeeding (EBF) regulations and initiatives are to enhance the health of both mothers and children (57,78). To raise EBF rates, national policies and initiatives have been put in place by the Ministry of Health (MOH) and agencies such as UNICEF and WHO (79). The National Health Policy and Breastfeeding Guidelines, the Baby-Friendly Hospital Initiative (BFHI), Community Health Worker (CHW) initiatives, and public awareness campaigns are important policies (47,80). Increased knowledge of the advantages of EBF, better training for

healthcare professionals, and easier access to EBF data in remote areas are examples of successes (81).

International Regulations and Commitments: Liberia has ratified two international agreements - the WHO's Global Strategy for Infant and Young Child Feeding and the International Code of Marketing of Breast Milk Substitutes, which promote the practice of EBF. The implementation of these policies helps limit the advertising of substitutes for breast milk, thereby protecting breastfeeding from commercial forces that have the potential to negatively impact EBF practices (82,83).

Maternity Protection Laws: Maternity leave for breastfeeding mothers is included in Liberia's Labor Law, but it is insufficient to fully support EBF because it only provides 14 weeks of paid leave for working mothers who are breastfeeding, less than the 18 weeks that the International Labour Organization (ILO) recommends (84). Such shortened maternity leave has an impact on EBF rates.

Furthermore, there is a lack of implementation of workplace policies on breastfeeding facilities and breastfeeding breaks. While some urban companies might offer limited nursing rooms and breaks, many Liberian women work in informal work areas and rural places devoid of such opportunities. The reinforcement and employment of workplace guidelines that can meaningfully support and enhance EBF rates in both urban and rural regions are unavailable. However, because of sociocultural attitudes, economic pressures, and misconceptions, Liberia's EBF rates are still lower than ideal. The execution of EBF projects is also impacted by inadequate healthcare access and resource limitations. Lower EBF rates are also a result of worker participation and economic pressure ((85).

Another issue is inconsistent monitoring and enforcement of policies. There is insufficient control to guarantee consistent promotion, and many healthcare facilities do not completely adhere to BFHI requirements. Even with public awareness campaigns, some cultures' cultural ideas on newborn feeding are hard to modify. Stronger policy enforcement, more assistance for working women, and ongoing public education involving family and community influencers are required to improve EBF practices in Liberia. In order to increase EBF rates and enhance child health outcomes throughout Liberia, these issues must be resolved (37).

Financing, Monitoring, and Enforcement: The 2003 WHO/UNICEF Global Strategy for Infant and Young Child Feeding (Global Strategy) (86,87), outlines evidence-based tactics for health agencies to support effective breastfeeding. The lack of economic viewpoints has been identified as a hindrance to the Global Strategy's actual execution (87), even though economic and financial considerations are essential to its legitimacy and efficacy. Markets fall short in providing incentives for achieving optimal breastfeeding (87), and in protecting and promoting the potential for significant global economic advantages that are associated with it (88).

Studies conducted at the macro and microeconomic levels have shown that these financial and economic advantages for health systems in both rich and developing nations (87). To reduce mortality among children under five, breastfeeding is one of the most economical interventions (87). Infant feeding programs cost between $100 and $200 per avoided death, making them equally or more cost-effective than measles and rotavirus vaccination (87,89). Of the interventions currently in use, breastfeeding counseling (and fortification) is thought to have the greatest potential to lessen the burden of child mortality and morbidity (87).

Even though the health sector receives a share of Liberia's national budget, there isn't a dedicated or safeguarded funding source that is used exclusively to support EBF programs. Implementing and maintaining breastfeeding promotion, support, and protection initiatives across the country is severely hampered by this lack of dedicated funding.

For example, although Liberia's health financing has improved since the post-Ebola recovery phase, a sizable amount of health spending still primarily depends on donations from outside sources rather than steady local investment, according to UNICEF (2020) report (90). Even while priority sectors like EBF have been shown to be cost-effective and to have long-term positive effects on population health, they are frequently neglected or completely left out of national budget lines.

Furthermore, Liberia has fallen short of the requirements for funding national breastfeeding initiatives, as stated in the Global Breastfeeding Scorecard (91). The scorecard highlights that in order to achieve sustainable EBF outcomes, specific budgetary resources are needed for structural supports such as the implementation of the Baby-Friendly Hospital Initiative (BFHI) and the control of the marketing of breastmilk substitutes, in addition to educating health workers and providing lactation counseling.

Additionally, initiatives that assist breastfeeding education, postpartum counseling, and community health workers (CHWs) continue to be dispersed and frequently short-lived due to a lack of focused funding. Evidence indicates that for every $1 invested in breastfeeding, there is a $35 return in health and economic advantages through higher cognitive development, decreased child illness, and increased productivity later in life (92). This underinvestment stands in stark contrast to this. As a result, national initiatives are still susceptible to financial swings and policy neglect, given the absence of a specific line item for EBF in Liberia's health budget.

4.2.3 Political Mobilization, Social Mobilization, and Mass Media

Using political and social mobilization alongside mass media campaigns can effectively promote EBF in Liberia. These efforts can raise awareness about the benefits of breastfeeding, challenge cultural misconceptions, and encourage community support for breastfeeding mothers (93).

Breastfeeding mothers find helpful advice from radio, television, and newspapers. Table 3 highlights the role of the media in influencing breastfeeding mothers to implement EBF. Mothers in Liberia who read periodicals or newspapers are more likely to introduce meals to their infants at a younger age (38.1%), with an equivalent early feeding frequency (EBF) of 61.9%, than mothers who do not read (29.7%), with an EBF rate of 70.3% (Table 3), (37). Television non-watchers introduce food earlier at greater rates in Liberia, resulting in lower EBF rates of 66.9%. (Table 3) (37).

Mothers in Ghana and Sierra Leone who watch television are more likely than those who do not to start solid, semi-solid, or soft foods at a younger age. According to Issaka et al. (37), the rates of early food introduction in Liberia are almost the same for mothers who listen to the radio (31.6%) and those who do not (30.4%). Early meal introduction is linked to media exposure, especially from newspapers and magazines, which suggests a reduced EBF rate. Geographical disparities imply that breastfeeding behaviors are highly influenced by local information availability and cultural norms (37).

Table 3. Mothers' Individual-, household- and community-level characteristics of infants aged 3–5 months in different regions of Liberia, 2007–2013. (37)

Characteristic	*Liberia %*
Mother read newspaper/magazine	
No	29.7
Yes	38.1
Mother listened to the radio	
No	30.4
Yes	31.6
Mother watched television	
No	32.1
Yes	28.5
Geographical/Administrative region	
1	51.3
2	4.3
3	37.1
4	28.7
5	18.5
6	28.8

1 = Monrovia (Liberia)

2 = North Western (Liberia)

3 = South Central (Liberia)

4 = South Eastern (Liberia)

5 = South Eastern (Liberia)

6 = North Central (Liberia)

4.3 Appropriate mediation in improving EBF in a Situation Similar to Liberia

Suitable interventions aimed at improving EBF have been reported in several countries with similar sociodemographic features as Liberia. These interventions played a prominent role in increasing EBF in those countries. Ghana and South Africa are two countries that have employed strategies that impacted positively on EBF.

4.3.1 Discoveries in Designated Countries

4.3.1.1 Ghana

Because of Ghana's limited maternity leave (3 months), working mothers were terminating exclusive breastfeeding (EBF) earlier than the recommended period for breastfeeding (94). The proportion of women engaging in EBF for the suggested six months decreased as women's participation in formal employment increased from 33.5% in 1993 to 54.8% in 2019 (95,96). Several initiatives, such as the Ghana Breastfeeding Promotion Regulation 2000 (Legislative Instrument [LI] 1667) (83) and the Baby-Friendly Hospital Initiative (BFHI) of 1991, have been put into place to increase EBF rates. Materials for advocacy and education, communication, and information (IEC) were also utilized (95).

The Enhanced Nutrition and Value Chain (ENVAC) intervention produced by the World Food Programme (WFP) of the United Nations, which targets adolescents, young children, and pregnant and nursing women was also implemented. These strategies, utilized in Ghana, have helped mothers receive better breastfeeding information and have increased attendance at ANC and Child Welfare Clinics (CWC). Regarding feeding patterns, 74.6% of children were exclusively breastfed and, after giving birth, 98.2% of women started nursing within the first 30 minutes due to the utilization of the above strategies (95). The high incidence of EBF was also attributable to improved mother education at CWCs about infant and young child feeding practices (IYCF) (97). Similar studies carried out in Norway and Kenya indicated that the Baby Friendly Initiative in community health services improved the size of EBF by up to six months, authenticating the effectiveness of the strategy (98,99).

4.3.1.2 South Africa

According to reports, South Africa has one of the lowest rates of exclusive breastfeeding (EBF) in the continent. EBF rates in South African infants aged 0–6 months ranged from 6.2% to 25.7%, according to national and regional research carried out between 1998 and 2009. Following a consultation on the topic in 2011, the National Minister of Health released the Tshwane Declaration of Support for Breastfeeding in South Africa (Tshwane Declaration), marking a significant change in national policy to support EBF for all women in the country, regardless of HIV status (100,101). By September 2012, EBF messaging for front-line workers was emphasized as a policy, and free formula milk for women living with HIV was removed from the Prevention of Mother-to-Child Transmission (PMTCT) program (101).

According to this report, EBF rose dramatically in South Africa between 2010 and 2012–13 in both the country and all nine provinces. The EBF for South Africa, which was 22.9% in 2010, rose to 35.7% in 2011–2012 and then reached 59.1% in 2012–2013. Revisions were made to the Infant and Young Child Feeding (IYCF) guidelines, and free infant formula was no longer distributed. The program was phased out beginning April 1, 2012, and it was completely discontinued by September 1 (101). In South Africa, the Code of Marketing of Breastmilk Substitutes was put into effect by law (101). The Tshwane Declaration of Support for Breastfeeding in South Africa (100) and the Policy Directive for the Implementation of the Declaration on Support of Exclusive Breastfeeding and Revised Guidelines on Infant and Young Child Feeding for Women with HIV (101), respectively, were requested in letters addressed to provincial heads of health to be implemented.

All provinces created updated infant and young child feeding policies and implementation plans for 2012–2013 following this national advice. After a review of these policies, the following

discovered elements were common to all of them: IYCF policy in line with national policy (promotion of EBF for all infants under six months of age, for example), withdrawal of free formula from the PMTCT program (no new formula as of 1 April 2012, with all free formula withdrawn by the end of 2012), training programs for facility managers and health workers, implementation and strengthening of the Mother Baby Friendly Hospital Initiative (MBFHI), Kangaroo Mother Care, mother's milk banks, and a variety of communication strategies, including community outreach programs, radio programming, print ads, information, education, and counseling (IEC) materials, outdoor advertising (e.g., billboards), informational outreach programs, and training of community health workers in breastfeeding promotion and support (101).

The Tshwane Declaration in South Africa led to increased media attention and a resurgence in MBFHI, with the number of accredited hospitals increasing from 178 in 2005 to 382 in 2014-2015. Interventions such as baby-friendly support, counselling, training of health workers, community counselling, and integrated mass media and counselling significantly increased EBF. (101). The implementation of the IYCF post-Tshwane Declaration, which used proven strategies, supports the argument that changes in national policy at all levels contributed to the rapid increase in EBF between 2010 and 2012-2013 (101).

Chapter Five: Discussion

5.1 Overview of Key Findings and Relevance to Study Objectives

This study investigated the many levels of factors that affect Liberian exclusive breastfeeding (EBF) habits. EBF habits were found to be significantly influenced by individual maternal variables, including baby health, breastfeeding awareness, postpartum mental health, and maternal age. Additionally, structural and contextual factors such as social support, job accommodations, the availability and caliber of health services, and wider cultural norms surrounding child feeding were identified as crucial. Socioeconomic factors, particularly work constraints and educational achievement, had a pervasive effect on mothers' capacity to maintain EBF for the suggested six months.

By revealing maternal and infant-level influences (Objective 1), the significance of household and cultural factors (Objective 2), the difficulties associated with jobs and access to the health system (Objective 3), and the impact of larger policy and structural environments (Objective 4), these findings address the particular goals of the study. Additionally, they provide a basis for evidence-based, customized recommendations (Objective 5) that are based on regional intervention models as well as national realities.

5.2 Maternal, Community, and Health System Factors

Key factors influencing breastfeeding behaviors at the individual level include maternal education, perceived lactation challenges, and mental wellness. Research has consistently demonstrated a high correlation between successful EBF and maternal confidence and nursing self-efficacy (102–104). However, early breastfeeding discontinuation is made worse in Liberia by a lack of access to lactation specialists, inadequate mental health screening during and after pregnancy, and gaps in counseling.

The results are consistent with research showing that social support, such as partner participation, family support, and social norms, can either strengthen or weaken EBF (105–107). Particularly in rural and low-income urban areas, traditional ideas about baby hunger, the perceived insufficiency of breast milk, and the early introduction of supplemental foods are still prevalent in Liberia. Without consistent and culturally aware community involvement, it is challenging to refute these ideas.

Access to the health system was also found to have a mixed effect. Although prenatal clinic visits are typically linked to greater EBF rates, some mothers indicated that health professionals gave them unclear or inconsistent guidance, which is consistent with findings from regional research (108). This emphasizes how important it is to integrate EBF counseling across the maternal healthcare continuum, provide consistent messaging, and enhance training.

5.3 Economic Pressures and Structural Barriers

A sizable percentage of mothers stated that work-related stress caused them to terminate EBF early. This is consistent with global trends that indicate a significant negative correlation between breastfeeding length and maternal work, especially in environments without official maternity protections (92). Many women in Liberia work in agriculture or informal jobs, which provide limited opportunities for breastfeeding and milk expression. Long commutes, a shortage of lactation areas at work, and restricted maternity leave are additional obstacles faced by urban women; these issues have also been noted in research conducted in metropolitan Kenya and Nigeria (109,110).

Despite the fact that Liberia has national policies that support mother and child health, including guidelines that are in line with WHO recommendations, these regulations are still not well enforced. For instance, formula marketing that discourages breastfeeding is permitted due to the

incomplete implementation of the International Code of Marketing of Breast Milk Substitutes (111). Furthermore, even though BFHI is a recognized policy in Liberia, staffing and financial limitations have prevented it from being scaled up.

5.4 Reflecting on Ambiguities and Gaps in Evidence

Although a number of trends were apparent, some data on the factors that influence EBF are still unclear. For example, in this study, educational attainment showed both facilitating and limiting effects, even though higher education is generally linked to longer breastfeeding duration worldwide. Similar to findings by Agbozo et al. (112) in Ghana, some educated mothers reported having greater access to resources and information about EBF, while others mentioned professional demands and an early return to work as obstacles.

Prenatal and postnatal care are other areas where there is uncertainty. Mothers reported variable counseling quality and occasionally contradicting instructions, even though engagement with health services is normally beneficial. This bolsters worries expressed in systematic studies (2) that better EBF results might not result from simply expanding service coverage without focusing on quality.

These difficulties emphasize the significance of context-specific research and how policy, the economy, culture, and gender norms intersect to determine EBF determinants. Given the diversity of Liberia's regions, a one-size-fits-all approach to assistance is unlikely to be effective.

5.5 Comparative Reflections: Integrating Lessons from Ghana and South Africa

The experiences of Ghana and South Africa provide pertinent instances of how multi-sectoral and context-sensitive initiatives might successfully enhance EBF rather than acting as stand-alone analyses. According to Aryeetey and Dykes (113), Ghana's experience with BFHI scale-up, community health worker integration, and public education campaigns showed that development

may be fueled by consistent investment and local adaptation of global frameworks, such as WHO's Global Strategy. The Tshwane Declaration reforms in South Africa, such as the elimination of the free formula from PMTCT and the development of a more robust legislative framework, demonstrate the potent influence of political will and implementation (114).

These instances highlight the importance of coordinating health interventions with more general labor legislation, public awareness initiatives, and peer support that is ingrained in the culture. But care must be taken because relying too much on a limited number of nation comparisons can mask the variety of settings, even within sub-Saharan Africa. To more effectively adapt lessons to Liberia's linguistic, cultural, and governance context, more comparative studies throughout Francophone West Africa are required.

5.6 Practical Implications and Recommendations

The results confirm that community-level and systemic impediments must be addressed through integrated, multi-level methods to improve exclusive breastfeeding (EBF) in Liberia. Stronger enforcement of maternity protection legislation, workplace breastfeeding accommodations, and the International Code of Marketing of Breast Milk Substitutes are just a few examples of the policies that must be changed. It is also crucial to strengthen the health system by standardizing EBF counseling during prenatal and postnatal treatment, growing the Baby-Friendly Hospital Initiative (BFHI), and enhancing training for health workers. Through these actions, mothers in every region will have access to reliable, excellent breastfeeding support.

Reforms to the health system and policies are essential, but so are community involvement and focused assistance for working mothers. Local influencers and mass media initiatives can assist in changing cultural norms and increasing community acceptance for EBF. EBF initiatives should have special funding, along with strong monitoring mechanisms that collect data broken down by

income, age, and area. Lastly, a more supportive environment for long-term nursing habits can be established by attending to the needs of working women, especially those in the unorganized sector, through programs like mobile lactation stations and community daycare. Liberia can create a supportive atmosphere that upholds women's breastfeeding rights and can increase child survival by incorporating these strategies.

5.2 Limitations

This study had a number of drawbacks. First, there is not much written material about EBF practices in Liberia, particularly in low-income urban and rural areas. A large portion of the data came from self-reported behavior, which could be biased by social desirability or memory. Despite being suggestive, the results might not adequately represent the range of experiences among Liberia's linguistic groups and counties. Moreover, environmental factors that may have a substantial impact on a mother's ability to exclusively breastfeed, such as housing circumstances, access to clean water, and transportation infrastructure, were not fully addressed. Additionally, even though South Africa and Ghana were utilized as regional examples, there is a chance that their experiences may be overgeneralized without enough contextual modification.

For future research to give a more complete picture of EBF determinants and intervention options in Liberia, mixed methods designs, a more regionally representative sample, and environmental and policy-level analysis should all be included.

The Usefulness and Limitations of the Lancet Breastfeeding Framework: The methodology and interpretation of the results in this study were greatly influenced by the Lancet Breastfeeding Framework (2023). It enabled a more comprehensive knowledge of the various elements impacting exclusive breastfeeding (EBF) in Liberia by offering a structured, multi-level lens that traversed

the person, community, health system, and structural domains. For example, the framework's focus on lactation difficulties and maternal mental health helped bring to light frequently disregarded psychological constraints faced by mothers in rural areas. In a similar vein, its incorporation of marketing and regulatory aspects exposed the deficiencies in workplace breastfeeding support and national implementation of the International Code.

However, using the framework also made some of its shortcomings clear. Although thorough, its wide framework occasionally needed further contextual adjustment to adequately represent the dynamics of Liberia's informal sector, traditional birth practices, and infrastructure inequalities. Furthermore, because the paradigm is based on information from around the world, it might inadvertently underrepresent sociocultural factors unique to a given area, like traditional caregiving hierarchies or the influence of subsistence farming on mothers' workloads. Notwithstanding these drawbacks, the framework provided a solid basis for cross-level data triangulation and the identification of practical leverage areas for practice and policy.

Chapter Six: Conclusion and Recommendations

6.1 Conclusion

The research on exclusive breastfeeding (EBF) in Liberia indicates a variety of factors impacting exclusive breastfeeding in Liberia. The occupations of breastfeeding mothers have a significant effect on their breastfeeding habits. Some working women who were farming found it difficult to sustain EBF. EBF is significantly impacted by the educational levels of breastfeeding mothers. Complementary meals are typically introduced earlier in life in higher education. EBF is influenced by employment status; mothers who are not employed are more likely to use EBF. Pressures from urban living and work, especially in Monrovia resulted in the early introduction of solid and semisolid food, thus reducing the practice of EBF.

Although there was no information regarding the direct association between safe water access and EBF relative to Liberia, it does indirectly support EBF by cutting down on the amount of time women spend fetching water. Mothers who regularly visit prenatal clinics and give birth in a medical facility are more inclined to practice EBF at higher rates than mothers who do not, thus, indicating that the place of birth for children and prenatal care greatly impact EBF. This highlights the importance of the availability of universal healthcare for breastfeeding mothers in Liberia.

Additionally, the economic condition of a family positively or negatively affects exclusive breastfeeding habits; lower-income mothers are burdened by employment difficulties, compelling them to introduce solid or semi-solid foods to their children, thus decreasing their EBF rates. Wealthier households also experience lower EBF rates due to the influence of advertised alternative sources of food for children, coupled with their financial strength to purchase such food. This emphasizes the need to provide education on the benefits of EBF across all socioeconomic groups.

Culturally suitable health education is also very much needed due to the prevalence of misconceptions relative to colostrum and the wave of marketing advertisements that promote alternative foods for children.

6.2 Recommendations

The following recommendations are paramount to improving exclusive breastfeeding habits in Liberia. The appropriate stakeholders for implementation are included:

1. Laws and Policies (Ministry of Health (MoH), National Legislature, NGOs (advocacy focused)): Strengthen breastfeeding mothers' rights to maternity leave and ensure that these rights are implemented to aid mothers in practicing EBF. Laws should be put in place that will properly supervise the promotion of substitutes to breast milk, in line with what is acceptable internationally, to protect the practice of exclusive breastfeeding (115–117).
2. Healthcare Enhancements (MoH, Healthcare Professionals, NGOs (health systems support)): Breastfeeding mothers should be offered information and support relative to the benefits of EBF, as well as increased access to healthcare services, especially in the rural regions of Liberia (118–120).
3. Educational Promotions (Healthcare Professionals, MoH, Community Leaders, and Traditional Birth Attendants (TBA)): Healthcare workers should be educated/trained to create appropriate awareness about the benefits of EBF, including enlightening breastfeeding mothers about the benefits of colostrum. Traditional birth attendants and community leaders should be integrated into the training, as well as utilize appropriate traditional breastfeeding information in EBF education (121,122).

4. Provision of Networks for Mothers (Community Leaders, NGOs, Local Health Facilities): Form areas where breastfeeding mothers can meet to exchange valuable information relative to exclusive breastfeeding (77,123).
5. Study and Monitoring (MoH, Research Institutions, NGOs (data and evaluation), Healthcare Professionals): Ascertain the predominant problems faced by individual communities and investigate the disparities in the practices of EBF in a variety of regions in Liberia via additional studies. Monitor and evaluate the implementations of recommended remediation measures to track and assess their efficacy (124–126).

The appropriate implementation of these recommendations will assist in improving the practice of exclusive breastfeeding in Liberia, as well as identify additional challenges associated with exclusive breastfeeding practices to find appropriate solutions to such challenges.

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Appendix

Search Strategy Table for Exclusive Breastfeeding (EBF)

Study Population/Domain	**Determinants/Interventions**	**Outcomes**
Women of reproductive age	AND Maternal-infant bonding, lactation support, mental health, breastfeeding self-efficacy	AND Exclusive breastfeeding initiation and duration
OR Women aged 15–49	AND Cultural beliefs, household roles, gender norms, social support	OR Continuity of EBF for first 6 months
OR Mothers of infants aged 0–6 months	AND Health system factors (access, quality, counseling, postnatal care), community-based support, antenatal breastfeeding education	OR Improved breastfeeding knowledge and practices
OR Breastfeeding mothers in urban Liberia	AND Workplace policies, maternity leave, informal sector employment, lack of lactation spaces	OR Return to work and early cessation of breastfeeding
OR Low-income mothers	AND National policies, labor laws, Code implementation, formula marketing regulation	OR Policy impact on EBF rates

OR Mothers in Sub-Saharan Africa	AND Integrated interventions from Ghana/South Africa: peer counseling, Baby-Friendly Hospital Initiative (BFHI), community health worker programs, mass media campaigns	OR Comparative improvements in EBF rates

Note: The search terms in the first and third columns were combined with the objective-specific terms in the second column.