

# **Factors Influencing the Practice of Exclusive Breastfeeding and Other Infant Feeding Practices** in the First Six Months of Life in West and Central Africa

A COMPREHENSIVE LITERATURE REVIEW





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### THE STRONGER WITH BREASTMILK ONLY

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# Executive Summary

## INTRODUCTION

Babies and children in West and Central Africa require good nutrition for their survival, health, and development. For the first six months of life, breastmilk is the only food babies need. Breastmilk provides immediate and long-term health benefits.

The World Health Organization (WHO) and UNICEF recommend exclusive breastfeeding—giving infants breastmilk only, with no water, other liquids, or foods—for the first six months of life (WHO and UNICEF, 2017; UNICEF, 2016a). Yet currently, in West and Central Africa<sup>1</sup>, only one-third of infants are exclusively breastfed (UNICEF, 2019b), well below the global target of 50 percent set by the World Health Assembly for 2025. A significant barrier to exclusive breastfeeding in this region is the practice of giving water in addition to breastmilk, affecting 40 percent of infants aged zero to six months (UNICEF, 2017).

Efforts to improve exclusive breastfeeding rates require a deeper understanding of why alternative feeding behaviours are occurring and who is influencing them. The Lancet series on breastfeeding published in 2016 highlighted the multifactorial determinants of breastfeeding and underscored the need to implement supported interventions concurrently through various channels (Rollins et al., 2016). In response, Alive & Thrive and UNICEF West and Central Africa conducted a comprehensive literature review to identify what influences infant feeding practices in West and Central Africa, focusing particularly on exclusive breastfeeding and the practice of giving water – as well as other liquids and foods – to infants during their first six months of life. A review of the breastfeeding literature specific to this region had not yet been done prior to writing this report.

In 2019, only  
one-third  
of infants were  
exclusively  
breastfed in  
West and Central  
Africa

<sup>1</sup> The West and Central Africa region includes all 24 countries supported by the UNICEF West and Central Africa regional office. These countries include: Benin, Burkina Faso, Cameroon, Cap Verde, Central African Republic, Chad, Congo, DRC, Cote d'Ivoire, Equatorial Guinea, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Sao Tome e Principe, Senegal, Sierra Leone and Togo.



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## METHODS

The literature review included quantitative, qualitative, and mixed-method studies on feeding practices of infants aged zero to six months in West and Central Africa published from 1988 to 2018<sup>2</sup>. It included all references focusing on the social and behavioural determinants of either or both:

Exclusive  
breastfeeding  
of infants aged  
zero to six  
months

Giving water  
and other liquids  
or foods to infants  
in the same  
age group

Findings from quantitative and qualitative studies were analysed separately. For the quantitative studies, relevant data were coded into categories using the conceptual model from the 2016 Lancet Series on Breastfeeding to analyse factors that influence breastfeeding behaviours at three levels of determinants: individual, structural, and setting (Rollins et al., 2016). For the qualitative analysis, the studies and their content were organized according to four key infant feeding practices: breastfeeding, early initiation of breastfeeding, exclusive breastfeeding, and supplementing with water, other liquids, and foods.

<sup>2</sup> The review included studies conducted before year 2000, given that 1) very few studies had been conducted on the topic in some of the countries and 2) because nutrition specialists in those countries felt that the findings were still relevant, despite being 'old'.

## FINDINGS

The literature search resulted in 225 research references, representing 19 of the 24 countries supported by the UNICEF West and Central Africa regional office. The majority of studies were from Nigeria (n=108) and Ghana (n=45), while other countries in the region were represented by less than five studies each. This report presents the findings of both the quantitative and qualitative studies to provide a comprehensive description of the results.

Key determinants at the *individual level*, including maternal socio-economic attributes, perceptions, beliefs, and mother-infant interactions, were:

- *Sociodemographic attributes:* Higher maternal and paternal education levels and being married were positively associated with exclusive breastfeeding practices. There was no clear direction of influence on exclusive breastfeeding when it came to the following attributes: the size of the family (or parity), wealth quintile, place of residence (urban or rural), and ethnicity.
- *Maternal knowledge and perceived benefits about breastfeeding.* Mothers' perceived benefits of breastfeeding were positively associated with exclusive breastfeeding. However, in some countries, women who thought they were exclusively breastfeeding were not actually doing so. This was related to a low maternal understanding of what "exclusive" breastfeeding means and its duration.
- *Maternal intention to breastfeed.* A woman's intent to breastfeed was generally associated with exclusive breastfeeding.
- *Individual and social expectations:* In general, there were personal and social expectations to breastfeed; families and communities often shaped feeding choices (see "settings" below).
- *Misconceptions around the quality and quantity of breastmilk.* These included beliefs around colostrum and spoiled breastmilk and doubts that mothers had the sufficient quantity and/or quality of breastmilk to satisfy the needs of their infants, motivating them to give water or other liquids/foods.
- *Maternal- and caregiver-infant interactions.* Mothers and family members took cues from infants to provide water or other liquids/foods. These cues included the infant crying after being breastfed, the infant wanting to suckle frequently, and/or the infant suffering from colic.
- *Costs of exclusive breastfeeding.* Many women found breastfeeding inconvenient, stressful, and time-consuming. Some mothers reported being afraid that breastfeeding would negatively impact their bodies and body image.

At the **setting level**, which includes key influentials such as the health system, family and community members, and the mother's workplace and/or employment, four key findings emerged.

- *Social norms surrounding breastfeeding.* While social norms generally supported breastfeeding, exclusive breastfeeding for the first six months of an infant's life was challenged by other social expectations and norms. These included the belief that giving water to quench an infant's thirst ensure his/her survival in hot climates and the belief that providing herbal remedies and other concoctions welcomes the infant and protects the infant's health and wellbeing.
- *Women's limited autonomy impacted breastfeeding decisions and practices.* Many women lived in family systems in which they have limited autonomy regarding infant feeding and care. Younger and first-time mothers were particularly vulnerable to family and other influences.
- *Grandmothers were the closest and most influential people regarding infant care and feeding, including breastfeeding, in most families.* Whether in favor or not of exclusive breastfeeding, grandmothers' decisions and recommendations were rooted in their beliefs and experiences and motivated by the desire to maximize infant survival, health and development, and minimize risks.
- *Gender-related dynamics.* Many women felt they have limited say over some decisions related to or influencing infant feeding and care since the ultimate decision authority lay with their husbands.
- *Health care facilities and workers.* Health workers were well-respected by mothers and strong influencers of infant feeding, but contradictory social norms and belief systems challenged their role in helping mothers to breastfeed as recommended. Access to maternal health care, exposure to breastfeeding counselling, and early initiation of breastfeeding positively influenced exclusive breastfeeding. At the same time, there were gaps in knowledge, skills, and practices among health care workers that affected breastfeeding counselling and support. Some health workers faced deep-rooted traditional beliefs and social norms that countered exclusive breastfeeding recommendations.

At the **structural level**, which includes factors like the media, national policies, and social trends that help shape the enabling environment for breastfeeding, two key factors emerged.

- *Work.* Maternal work, both informal and formal, was a key obstacle to exclusive breastfeeding. In the absence of supportive family-friendly and childcare policies and practices, women need support with duties within the home to find the time and space to breastfeed. Mothers also need supportive policies such as paid parental leave and lactation support within workplaces (including clean and private places to express and store breastmilk). These benefits help mothers maintain a connection with their infants and maintain exclusive breastfeeding when they return to work.
- *'Water is life.'* Beliefs and norms driven by the hot and dry climate of West and Central Africa are the main drivers of the ubiquitous practice of giving water, particularly in the Sahel sub-region.





## CONCLUSION

**This report provides a comprehensive review of peer-reviewed and grey literature on the social and behavioural determinants of exclusive breastfeeding and other feeding practices during an infant's first six months of life in West and Central Africa. Its findings draw attention to the multiple drivers and barriers to exclusive breastfeeding, as well as the various determinants of the practice of giving water to infants in the first six months of life, one of the main obstacles to exclusive breastfeeding in the region.**

The review underlines the importance of identifying and understanding the motivations of the people who influence infant feeding and care practices and the factors that both facilitate and prevent exclusive breastfeeding when designing interventions to protect, promote, and support exclusive breastfeeding. Implementation of social and behavioural change interventions grounded in this understanding are needed to tailor responses that are respectful, genuine, and acceptable to the families and communities for whom they are designed.

The evidence cited informed the design of Stronger With Breastmilk Only regional initiative to strengthen exclusive breastfeeding programmes by taking into account the social and behavioural determinants of giving water in the West and Central Africa region.

Findings from the review inform recommendations for programme managers and policymakers alike. Recommendations include the following and are provided in detail in Section VII of the report:

- Counsel and support mothers while involving grandmothers, fathers, and other family members in interpersonal communications to strengthen understanding of and support for exclusive breastfeeding within family systems.
- Work with traditional healers, traditional birth attendants, and religious leaders to adapt existing practices and recommendations that impede early initiation and maintenance of exclusive breastfeeding.
- Consult and involve communities in devising effective ways to raise awareness and build commitment to giving breastmilk only, on demand (day and night)—no water, other liquids, or foods from the moment of birth and for the first six months of life.
- Strengthen health workers' knowledge, skills, and motivation to counsel and support initiation and maintenance of exclusive breastfeeding. Acknowledge their challenges and engage them in identifying ways to overcome them.
- Design evidence-informed communication campaigns that resonate with and inspire families and implement them through multiple channels to shift social norms and promote family practices in favour of giving breastmilk only, no water (other liquids and foods) at birth and during the first six months of life.
- Invest in pro-breastfeeding programmes and policies to provide appropriate and long-lasting structure for the protection, promotion, and support for exclusive breastfeeding.







# I. Introduction

Improving exclusive breastfeeding (EBF) rates among infants for the first six months of life is critical to improving child survival, reducing stunting and other forms of malnutrition, and ensuring children have the opportunity to reach their full developmental potential (UNICEF, 2016b). These are priorities for children in West and Central Africa (UNICEF, 2020).

In most parts of West and Central Africa, breastfeeding is the norm. According to UNICEF 2019 data, 97 percent of infants in the region were breastfed. However, exclusive breastfeeding was far less prevalent, with only one-third of infants (31 percent) exclusively breastfed. The majority (70 percent) of breastfed infants younger than six months of age in the region were given additional liquids, or food in the first six months; in most cases, it was water (UNICEF, 2019b). Providing an infant water (or other liquids or foods) not only replaces much-needed breastmilk, leaving the child without the optimal nutrition necessary to grow but also increases their risk of illness from unsafe water or feeding utensils (Linkages, 2004). UNICEF has estimated that if plain water were no longer given in addition to breastmilk in the first six months of life, most countries in the West and Central African region would reach the global World Health Assembly target for EBF of 50 percent by 2025 (UNICEF, 2016b). Therefore, tackling this practice is a critical step to increase exclusive breastfeeding rates, prevent stunting and all forms of malnutrition, and ensure the survival and development of infants and young children throughout the region.

Alive & Thrive and UNICEF are partnering to improve breastfeeding practices in West and Central Africa by implementing a regional initiative, Stronger With Breastmilk Only.

This initiative calls on countries to scale up breastfeeding interventions by designing and implementing evidence-informed strategic interventions for sustainable social and behaviour change in favour of exclusive breastfeeding. The Stronger With Breastmilk Only initiative intends to build a regional movement and inspire national action towards achieving the 2025 World Health Assembly's global exclusive breastfeeding target.

To improve exclusive breastfeeding rates, a deeper understanding of why competing feeding behaviours are occurring and who is influencing them is necessary. This report presents a comprehensive literature review conducted by the Alive & Thrive and UNICEF West and Central Africa regional office, which identifies the factors that influence infant feeding practices in the West and Central Africa region, focusing mainly on exclusive breastfeeding and the practice of giving water – as well as other liquids and foods – to infants during their first six months of life.

The report is presented in five sections: 1) Methods, 2) Findings, including individual, setting and structural determinants of exclusive breastfeeding, and factors associated with giving water, herbal teas, and other liquids to infants under six months, 3) Discussion, 4) Limitations, and 5) Conclusion and recommendations based on the findings.

## OBJECTIVES OF THE LITERATURE REVIEW

- Review and catalogue the factors influencing (or ‘determinants of’) behaviours related to exclusive breastfeeding and giving water (and other liquids and foods) to infants in the first six months of their lives and identify people who influence the practice in West and Central Africa.
- Establish a comprehensive inventory of the social and behavioural determinants of exclusive breastfeeding and giving water (and other liquids and foods) to infants in the first six months of life in West and Central Africa.
- Use findings from the review as an evidence base to guide the development of social and behavioural change objectives, activities, messaging, and other tools supporting the Stronger with Breastmilk Only regional initiative.





## II. Methods

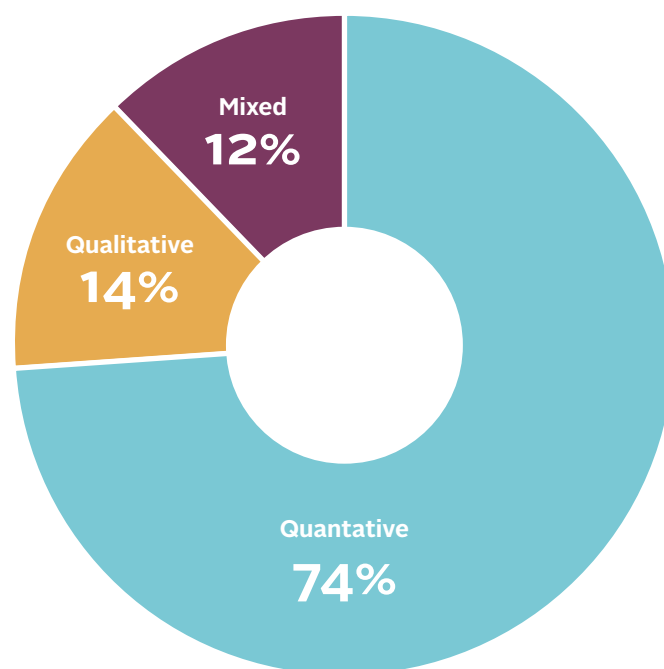
### REVIEW OF LITERATURE

The literature review was carried out between August 2018 and February 2019. It included published and unpublished qualitative, quantitative and mixed-method studies from 1988 until August 2018 and available in digital format.<sup>3</sup> The review's search covered peer-reviewed and grey literature on feeding practices of infants under six months of age in West and Central Africa. It included articles in both French and English. All references were considered if they had a primary focus on the social and behavioural determinants of either or both of the following: 1) exclusive breastfeeding of infants younger than six months, and 2) giving water and other liquids to infants of the same age group.

An Internet search was conducted through search engines using a list of pre-defined search terms (Annex A). Search engines included: PubMed, Google Scholar, Popline, and The Cochrane Library. Several institutional websites were also searched, including The Communication Initiative, Johns Hopkins Center for Communication Programs, FHI 360, Alive & Thrive, USAID Spring, World Alliance for Breastfeeding Action, Population Services International, Action Contre la Faim, Hellen Keller International, and the Food, Security and Nutrition Network. Also, a call to share reports and publications was made to UNICEF country offices in the region and to the Core Group Social and Behavioral Change Communication and Nutrition Working Groups.

Titles and abstracts of all references were reviewed and filtered according to the primary area of focus. All references that did not concern the selected geographical zone, breastfeeding, and infants aged under six months were excluded. After an initial selection process, references were reviewed a second time using each resource's methods and results sections. The final selection of resources was documented using the reference managing system, Zotero. A total of 225 research references were retained (Annex B).

**Figure 1:** Distribution of types of studies



<sup>3</sup> The review included studies conducted before year 2000, given that 1) very few studies had been conducted on the topic in some of the countries and 2) because nutrition specialists in those countries felt that the findings were still relevant, despite being 'old'.



## REFERENCES SELECTED

The comprehensive literature search resulted in the identification of 225 research references (167 quantitative, 31 qualitative, 27 mixed-method studies (Figure 1). References covered research conducted in 19 of the 24 countries supported by the UNICEF West and Central Africa regional office, including Benin (2), Burkina Faso (4), Cameroon (10), CAR (1), Chad (2), Cote D'Ivoire (4), DRC (9), Equatorial Guinea (1), Gambia (1), Ghana (45), Guinea Bissau (2), Liberia (1), Mali (3), Mauritania (3), Niger (5), Nigeria (108), Senegal (4), Sierra Leone (2), and Togo (3). Fifteen (15) regional studies were also identified.

Most studies were from Nigeria and Ghana. Given the uneven distribution of countries studied, it is important to emphasize that the findings from the review may not be applicable to all the countries in the region.

## SYNTHESIS OF RESULTS

Quantitative and qualitative findings were analysed separately. For the quantitative review, content analysis was employed, which involved coding relevant data into categories and organizing the data using the conceptual model described below. All statistically significant findings were considered regardless of the type (or strength) of analysis (cross-sectional, bivariate, or multivariate) that was carried out.

The qualitative findings were analysed using thematic content analysis. Authors followed an inductive process whereby abstracts, results, and discussions were read once; during a second reading, units of meaning were extracted and coded. Codes were subsequently organized in an Excel spreadsheet by four main themes related to infant feeding practices in the first six months of life: 1) breastfeeding, 2) early initiation of breastfeeding, 3) exclusive breastfeeding, and 4) supplementing breastmilk with water, other liquids, and foods. Collaborating authors coded and verified each other's coding. The present report describes findings on exclusive breastfeeding and the practice of giving water to infants less than six months of age.

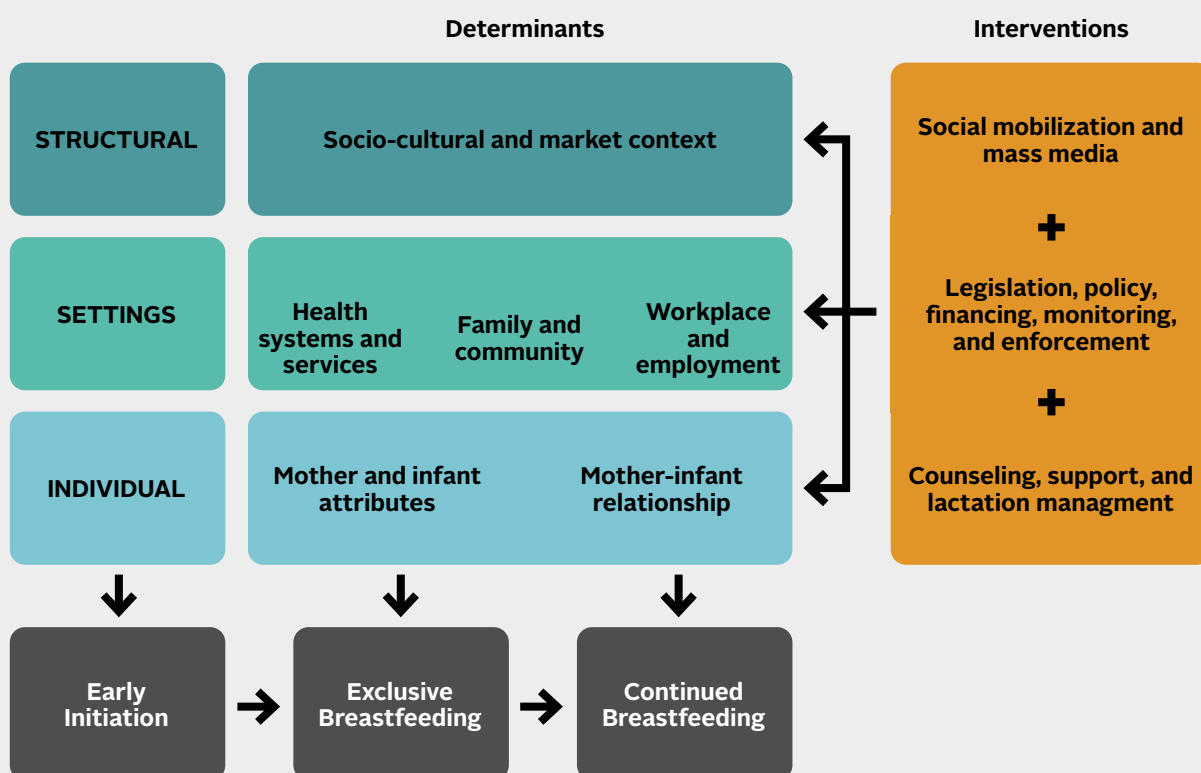


## CONCEPTUAL MODEL

Improving breastfeeding practices requires social and behavioural changes at multiple levels as nutrition behaviours are complex and influenced by various determinants. The conceptual model of the components for an enabling environment for breastfeeding presented in the 2016 Lancet Series on Breastfeeding was used to organize the findings (Rollins, 2016). The conceptual model presents key factors that influence breastfeeding decisions and behaviours, focusing on three levels of determinants: structural (i.e., enabling environment), settings, and individual (Figure 2)).

The **structural** level encompasses social factors that affect the whole population, often influenced by media, advertising, marketing, and national policies and legislation, including workplace regulations. The **settings** level includes health systems and services, community members (e.g., husbands, family, peers, and leaders), a mother's workplace and employment, and social norms. The **individual** level refers to characteristics of the mother, such as her age, education, breastfeeding knowledge, perceptions and intentions, and her relationship with her infant. Changing breastfeeding behaviours requires a holistic approach addressing the determinants of breastfeeding at all three levels of influence.

**Figure 2:** The components of an enabling environment for breastfeeding: A conceptual model



The structural level refers to the social factors that affect the whole population. For determinants, these factors include social trends, advertising, media, and products available in stores; interventions at the structural level include legislation, policy, and media and social mobilization to change social attitudes and practices. These factors are distal and unidirectional. The population is uniformly exposed to them, but they are not uniformly interpreted. Pregnant women and women with young children are affected in more direct and personalized ways than are women with no children and men and community members. This effect occurs through various interactions, attitudes, practices, and information in the three main settings, which are, in turn,

affected by the social, cultural, and market context. At the most intimate level, women's breastfeeding behavior is influenced by personal attributes such as her age, weight, education, and confidence, and by attributes of her baby such as sex, wellbeing, and temperament. Breastfeeding is a behavior that entails a relationship between mother and baby. Moment-by-moment interactions between them, including whether the baby is thought to be satisfied and content, are the result of the mother's internalization of the influences at the level of structural determinants and settings.

Rollins, N., et al. "Why invest, and what it will take to improve breastfeeding practices?" The Lancet, Jan. 2016.

# III. Factors influencing exclusive breastfeeding

## SUMMARY OF DETERMINANTS FROM QUANTITATIVE STUDIES

Table 1 on pages 15 and 16 provides a summary of the quantitative findings of the review. It identifies and organizes key determinants of exclusive breastfeeding, using the conceptual model proposed by Rollins and colleagues in the 2016 Lancet Series on Breastfeeding.

At the **individual** level, determinants are presented in the following categories: maternal socio-demographic attributes, maternal knowledge, maternal perceptions, maternal intention (to breastfeed), maternal health, infant attributes, and mother-infant relationships.

For **settings**, categories concern the family/ household setting, health system, and the workplace.

**Structural** level determinants include climate, place of residence, and national policies. Table 1 describes each determinant by type, category, and sub-category and how it influences exclusive breastfeeding practices (the literature describes a direction of influence that is either “positive,” “negative,” or both: “mixed”). The last column provides the number of references in which the determinant emerged. Annex C provides the references to the publications for each of the determinants of Table 1.





**Table 1:** Determinants of exclusive breastfeeding rates and their influence from quantitative studies, West and Central Africa

	Category	Sub-category	Determinants/beliefs	Direction of influence	Number of references
Individual	Socio-demographic	Age	Higher maternal age	Mixed	17
		Education mother	Mother's higher education level	Positive	33
		Education spouse/partner	Father's education	Positive	5
		Marital status	Mother married	Positive	10
		Size of family/parity	Varies	Mixed	9
		Ethnicity	Varies	Mixed	8
		Religion	Varies	Mixed	10
		Household wealth	Varies	Mixed	5
		Geographic location	Varies	Mixed	8
	Maternal knowledge	Knowledge of EBF	Incomplete understanding of the nature and duration of EBF	Negative	4
	Maternal intention	Intention	Intention and motivation to breastfeed	Positive	9
	Maternal perceptions	Perceived benefits	Benefits of breastfeeding and/or EBF	Positive	19
		Perceived barriers	Mother has insufficient quantity of breastmilk	Negative	13
			EBF is time-consuming, demanding	Negative	6
			Breastfeeding affects mother's figure	Negative	3
			Uncomfortable breastfeeding in public	Negative	1
			EBF deteriorates maternal nutritional status	Negative	1
		Perceived outcomes for children	EBF results in child becoming malnourished	Negative	2
			EBF will make it more difficult to wean baby	Negative	1
	Maternal health		Psychological stress and anxiety	Negative	1
			Psychological pain	Negative	1
			Illness	Negative	4
	Infant attributes	Infant's age (0-5 months)	Older age ( $\leq 5$ months)	Negative	9
		Infant's sex	Male	Negative	2
		Infant characteristics	Premature, twin/triplet, etc.	Negative	1
			Short birth interval (e.g. $< 2$ years)	Negative	2
			Low weight gain of infant	Negative	6
			Illness in last two weeks	Negative	4

**Table 1:** Determinants of exclusive breastfeeding rates and their influence from quantitative studies, West and Central Africa (continued)

	Sub-level	Category	Sub-category	Determinants/beliefs	Direction of influence	Number of references
Settings	Family/ household	Family support	Family member	Husband	Mixed	6
				Grandmother	Mixed	2
		Community support	Support group	Support group	Mixed	1
	Health system	Health system support	Health care worker influence	Breastfeeding counselling	Positive	8
		Health service utilization	Attendance of antenatal care/postnatal care	Antenatal care	Positive	15
				Postnatal care	Positive	5
			Home v. facility birth and type of health facility	Birth in a health facility; tertiary or secondary health facility	Positive	15
		Delivery characteristics	Mode of delivery	Vaginal	Positive	5
				Caesarean	Negative	15
			Type of provider	Skilled health professional	Positive	15
		Infant characteristics at birth		Multiple births	Negative	2
				Prematurity	Negative	1
		Post-delivery characteristics	Post-delivery care	Early initiation of breastfeeding	Positive	4
	Workplace and employment	Work status	Work responsibilities	Working mothers; professional or farming	Negative	26
Structural	-	Maternity protection	Maternity leave	Three or more months	Positive	2
		Social norms (trends)	Climate	Heat/water is life	Negative	3

## FINDINGS FROM QUALITATIVE AND QUANTITATIVE STUDIES

This sub-section presents and discusses both quantitative and qualitative findings together.<sup>4</sup>

### Individual-level determinants

#### Sociodemographic attributes

The sociodemographic attributes of mothers that were found to be statistically associated with improved exclusive breastfeeding practices included: higher levels of maternal and paternal education, maternal literacy and being married (Regional: Apanga, 2014 ; DRC: Dhakal et al., 2017; Nigeria: Gayawan et al., 2014, Qureshi et al. 2011). While maternal age was associated with exclusive breastfeeding, results were mixed. One study from Nigeria found that exclusive breastfeeding increased with maternal age, but peaked around 32 years and reduced steadily afterwards (Nigeria: Gayawan et al., 2014). Other studies reported significant increases in EBF with maternal age (Qureshi et al., 2011).

Household/family attributes associated with exclusive breastfeeding could have either a positive or a negative impact on exclusive breastfeeding. There was no clear direction of influence on exclusive breastfeeding when it came to the following attributes: size of the family (or parity), household wealth quintile, place of residence (urban or rural), and ethnicity.

The influence of religion varied between countries and contexts. In Nigeria, one study by Jacdonmi and colleagues (2016) found that being Christian had a positive influence on exclusive breastfeeding behaviours, while another study (Ojofeitimi et al., 1999), found that affiliation to Christianity had a negative impact, with mothers being more likely to provide infants with holy water early in life. The provision of holy water and other liquids and/or foods for religious purposes was identified as a common practice in parts of West and Central Africa regardless of religious affiliation, and key reasons for children not being initiated to exclusive breastfeeding in the first hour of life (see Section IV on the provision of water for more information).

#### Maternal knowledge of breastfeeding

Incomplete understanding of the nature and duration of exclusive breastfeeding were identified as barriers to EBF in a number of studies (Chad: Aboubacar, 2017; Gambia: Senega-Janneh, 2001; Ghana: Obeng, 2015). On the other hand, maternal knowledge of the definition of EBF was a predictor of EBF (Burkina Faso: Cresswell et al., 2017). However, high maternal knowledge of breastfeeding and its benefits did not always translate into the intention to exclusively breastfeed. A study from Nigeria revealed that despite womens' high awareness of EBF and that breastmilk alone is sufficient for the baby for the first six months, few knew when to wean the baby (Nigeria: Saidu et al., 2014). This is a well-established principle in social and behavioral change: knowledge alone is not enough to trigger changes in behaviors.

Interestingly, some women who thought they were exclusively breastfeeding were actually not doing so, leading to possible over-reporting of the practice (Benin: Imorou, 2012; Cameroon: Ministry of Health, 1994); Ghana: Atindanbila, 2014; Obeng, 2015). In Benin, for example, some women believed that a woman still practices exclusive breastfeeding despite giving water, medicines, and food to her child (Benin: Imorou, 2012). Similarly, qualitative research from Ghana found that nursing mothers with babies under six months who thought they were effectively practicing breastfeeding and intended to EBF did not actually do so. Instead, they initiated breastfeeding much later than recommended, did not position the baby correctly, and fed the baby too infrequently (Ghana, Atindanbila, 2014). This lack of understanding often extended to family members beyond the mother, including grandmothers and fathers (Ghana: Iddrisou, 2013; Agani, 2017).

4 References that appear in the findings section do not list all the studies associated with each determinant. See Annex B for a complete list of references by country of study or Annex C for a list of the quantitative references listed in Table 1 according to each determinant (e.g., maternal age, maternal education).



## Maternal intention to breastfeed

Studies from multiple countries revealed that women who intended to exclusively breastfeed and made plans to do so were more likely to succeed. A study from Ghana found that mothers who reported motivation to breastfeed exclusively were more likely to do so (Ghana: Saaka et al., 2013). In another study by Aidam and colleagues in Ghana, women who planned to exclusively breastfeed at the time of delivery were about 2.5 times more likely to exclusively breastfeed their infants than mothers who did not (Ghana: Aidam et al., 2005b).

The strength of a woman's intent or commitment to exclusively breastfeed emerged as a facilitating factor in several qualitative studies (Ghana: Aidam et al., 2005b; Niger: Oumarou et al., 2012; Ghana: Saaka et al., 2013). According to a midwife in Niger, *"Women who are brave commit to breastfeeding exclusively; those who are afraid refuse to practice it."* (Niger: Oumarou et al., 2012) Other researchers reported that previous experiences with breastfeeding or having observed the infants of other family members or friends who have successfully exclusively breastfed, helped women breastfeed (Nigeria: Coetzee et al., 2017) (Niger: Oumarou et al., 2012).

## Maternal perceptions

### *Individual and social expectations*

In numerous studies, women perceived breastfeeding as the preferred and the most natural infant feeding practice (Benin: Imorou et al., 2012; DRC: Klemm et al., 2012; Gambia: Semega-Janneh et al., 2001; Ghana: Intiful et al., 2017, Otoo et al., 2009; Mali: Dettwyler et al., 1988; Nigeria: Agunbiade et al., 2012, Coetzee et al., 2017, Davies-Agetugbo, 1997, Ogbonna et al., 2018; Senegal: Faye, 2007). According to qualitative research conducted in Benin, mothers felt that breastfeeding should be performed every day, on demand, and often prompted by the infant crying. *For many mothers, the baby's cries constitute the request to breastfeed* (Benin: Imorou et al., 2012). In Nigeria, some women considered breastfeeding as a "religious privilege" since breastmilk was the "natural gift from God" (Nigeria: Coetzee et al., 2017).

Other research highlighted the social expectations and norms for women to breastfeed. Nigerian researchers Ogbonna and colleagues (2018) discussed how breastfeeding played an important role in forging African women's maternal identity: "Coming from an African setting, it seems abnormal not to want to breastfeed your own child. For me, it was never even an option not to breastfeed. Especially for an African woman – from the outset, it is just as if it is part of our psyche to breastfeed" (Nigeria: Ogbonna et al., 2018). Similarly, strong social expectations of breastfeeding were described in studies from DRC (Klemm et al., 2012) and Mali (Dettwyler, 1988), for example, where breastfeeding was considered a *child's right*. Other studies gave examples of how behaviours that deviated from this norm could result in sanctions. Resisting breastfeeding could provoke a range of negative reactions, from family displeasure (Ghana: Iddrisou, 2013) to anger (Ghana: Agani et al., 2017), scorn (Nigeria: Ogbonna et al., 2018), or stigmatizing claims that the mother was living with HIV, or the child was illegitimate (Nigeria: Ogbonna et al., 2017).



According to qualitative research conducted with women in Nigeria, women's feeding choices were often scrutinized by their communities: *"Whenever a child cries outside, everybody tends to shout at you to tell you to put the child to suck. When you refuse to do that, that is when they rain abuses on the woman saying she is not worthy of motherhood, she is not fit to be a mother and probably the child is not hers."* (Nigeria: Ogbonna et al., 2018). In a socio-anthropological study conducted in Niger, Oumarou and colleagues (2012) mentioned that it could be terrible for a mother to have no breastmilk, as she could be shunned or ostracized from her community.

### **Perceived benefits**

Mothers' knowledge of the benefits of breastfeeding was positively associated with EBF in most studies (Burkina Faso: Cresswell et al., 2017; Ghana: Nukpezah et al., 2018; Ivory Coast: Yeo et al., 2005). According to both quantitative and qualitative research in general the perceived benefits of breastfeeding were numerous (Nigeria: Agunbiade et al., 2012, Ogbonna et al., 2018, Coetzee et al., 2017, Davies-Agetugbo, 1997; Mali: Dettwyler et al., 1988; Benin: Imorou et al., 2012; Ghana: Intiful et al., 2017, Otoo et al., 2009; DRC: Klemm et al., 2012; Gambia: Semega-Janneh et al., 2001; Senegal: Faye, 2007). Breastfeeding was perceived to:

- Be the best source of food for babies
- Promote babies' good health and strength
- Protect babies against illnesses and disease
- Develop the baby's intelligence and promote good mental health
- Strengthen the bond between mother and baby

- Bring comfort to the mother by relieving breast discomfort
- Reassure and comfort the baby
- Be convenient
- Save money by preventing health care costs.

Among those who practiced EBF, the perceived advantages of EBF amplified some of the above-mentioned breastfeeding benefits (Chad: Aboubacar, 2017; Ghana: Otoo, 2009; Niger: Oumarou, 2012; Nigeria: Okafor et al., 2018; Olayemi et al., 2014; Tyndall et al., 2016). In the Niger study, some women mentioned having seen visible results among infants who were exclusively breastfed compared to those who were not. As noted by one of the respondents: *"I have six children. I exclusively breastfed the last two and the difference was clear.... Before my children did not walk for 18 months, but with EBF, they walked in 9-10 months."* (Niger: Oumarou et al., 2012) In focus group discussions held in Ghana, some women felt that EBF provides protection from the risks associated with poor sanitation and hygiene (Ghana: Otoo, 2009). Other benefits of EBF included: improved intelligence of the child (Ghana: Otoo, 2009); pregnancy prevention (Chad: Aboubacar, 2017), and convenience/ease when traveling (Ghana: Otoo, 2009).



## Perceived barriers

Despite the perceived benefits of breastfeeding, findings from the qualitative literature review also underlined how fragile the practice of breastfeeding was. Studies cited numerous barriers to breastfeeding. Some were borne from misconceptions and misinterpretations, such as perceived risks of poor-quality breastmilk (Chad: Aboubacar, 2017; Gambia: Semega-Janneh et al., 2001; Ghana: Agani et al., 2017;), perceived low breastfeeding efficacy (including low breastmilk supply) (Cameroon: Amani, 2015; Chad: Aboubacar, 2017; DRC: Klemm et al., 2012; Ghana: Tawiah-Agyemang et al., 2008). Others were practical in nature and were tied to breastfeeding problems (Chad: Aboubacar, 2017; DRC: Klemm et al., 2012; Ghana: Aborigo et al., 2012; Mali: Dettwyler, 1988; Niger: Keith, 2007; Nigeria: Ogbonna et al. I, 2018; Togo: UNICEF, 2015), unavailability (or absence) of the mother (DRC: Klemm et al., 2012; Cameroon: Amani et al., 2012, Gambia: Semega-Janneh et al., 2001; Ghana: Sika-Bright et al., 2014), and breastfeeding's influence on maternal body image (Ghana: Aborigo et al., 2012; Otoo et al., 2009; Nigeria: Aluko-Arowolo, 2012; Agunbiade et al., 2012; Ngwu et al., 2015).

## Perception of breastmilk as 'not enough' to satisfy the baby

Several qualitative studies described women's perceptions that breastmilk "is not enough" for a child as a barrier to exclusive breastfeeding. This included concerns over both the quality and the composition of breastmilk, leading mothers and other caregivers to provide infants with food, water, or other liquids to address nutrition and hydration concerns (Chad: Aboubacar, 2017; Ghana: Agani et al., 2017; Mauritania: Keith et al. 2009; Nigeria: Okafor et al, 2018; Isa, 2016; Olayemi et al., 2014). As evidenced from a study in Ghana, *"A child can be physically weak and will not be able to defend himself or herself if the child is fed with only breast milk."* (Ghana: Agani et al, 2017) Similarly, a study from Chad found that *"In Atar and Ain Ehl Taya women would say, 'It's good to give other fluids besides breastmilk, which often is not enough.'" (Chad: Aboubacar, 2017)*

In addition, multiple studies found that women doubted that the quantity of their breastmilk was sufficient for the first six months, motivating them to give water or supplemental feeds (Chad: Aboubacar, 2017; Ghana: Agani et al., 2017; Nigeria: Akuse and Obinya, 2002; Cameroon: Chiabi et al., 2011; Ghana: Diji et al., 2016; Nigeria: Sani, 2014; Niger: Keith, 2007; Ghana: Mogre et al., 2016; Ghana: Otoo et al., 2009) (See Section IV for more information on the provision of water and other liquids/foods). Studies also reported on specific signals from the baby, which triggered this perception. A common belief in Ghana, for example, was that if an infant cried after being breastfed, the mother must not have enough milk to satiate his or her hunger (Ghana: Otoo et al., 2009). Qualitative research among pregnant and lactating women in Niger found that many women did not understand the link between increased breastfeeding and producing more milk. Many women perceived a drop in milk supply around 3 to 4 months, which is fairly typical if one does not breastfeed sufficiently, given a child's growth spurt at that time (Niger: Keith, 2007).





Mothers also stated there were other factors that affected their milk supply and milk composition, including the mother's physical or psychological state: anxiety, worry, stress, hunger, or general physical condition (Chad: Aboubacar, 2017; Ghana: Otoo et al., 2009; Mali: Dettwyler, 1988; DRC: Klemm et al., 2017; Ghana: Otoo et al., 2014; Ghana: Marquis et al., 2016). In Chad, for example, focus group research conducted with mothers of children under six months reported that husbands are generally away, the stress of which impacts the mother's milk production (Chad: Aboubacar, 2017). Focus groups among peri-urban Ghanaian mothers found that maternal hunger affects the ability of the mother to exclusively breastfeed her (Cameroun: Amani, 2015; Ghana: Otoo et al., 2009). Findings from other studies underlined the importance of good maternal nutrition to stimulate lactation, exclusively breastfeeding or breastfeed for a longer duration (Cameroun: MOH, 1994; Ghana: Otoo et al., 2009; DRC: Klemm et al., 2012; Ghana: Otoo et al., 2009; Niger: Oumarou, 2012; Nigeria: Aluko-Arowolo, 2012; Okafor et al., 2018; Agunbiade et al., 2012; Sani, 2014). Mothers who reported being ill were less likely to exclusively breastfeed (DRC: Klemm et al., 2012; Ghana: Otoo et al., 2014). For example, HIV-positive mothers reported their illness negatively affected their ability to breastfeed (Ghana: Marquis et al., 2016). Mothers who experienced physical pain from breastfeeding (e.g., cracked nipples, engorgement, mastitis, etc.) were also less likely to exclusively breastfeed (Cameroon: Kakute et al., 2005; Chad: Aboubacar, 2017; DRC: Klemm et al., 2012; Ghana: Otoo et al., 2009; Nigeria: Agunbiade et al., 2012; Coetzee et al., 2017).

Dettwyler (1988), who conducted ethnographic research on infant feeding among women in Mali, reported that mothers believed that they could only produce a finite amount of breastmilk in their bodies. As stated by the author, "The women of Farimabougou believe that during lactation breast milk is produced 'from the blood' and that each woman has a finite amount of blood in her body during her lifetime. Therefore, it is impossible to increase or compensate for any lost blood or to affect the quantity of breastmilk available through diet or medicine. If a woman loses a lot of blood in an accident, for example, she will probably not have enough breastmilk for her children and will have to supplement with breastmilk substitutes or solid foods. Older women who have already nursed many children will likewise have a poor milk supply and will be tired all the time because they have 'used up all of their blood. Thus, women do perceive breastmilk as a product, transformed from blood, which can vary in quality but is generally superior to infant formula." (Mali: Dettwyler, 1988).



## Quality of breastmilk

Numerous qualitative studies reported on the perception that not just colostrum but also mature breastmilk — the latter under certain conditions — could become spoiled, constituting a reason to either stop breastfeeding or provide an alternative to breastmilk, such as water, other liquids and/or soft foods, until its quality improved (Guinea-Bissau: Gunnlaugsson et al., 1993; Mali: Dettwyler, 1988). Spoiled breastmilk could be transmitted to infants and provoke illnesses such as diarrhoea, stomach ache, fever, and even worms in infants (Cameroon: Ministry of Health, 1994); Chad: Aboubacar, 2017; Gambia: Semega-Janneh et al., 2001; Ghana: Agani et al., 2017, Iddrisou, 2013; Niger: Hamani et al., 2012; Nigeria: Sani, 2014; and Sierra Leone: McMahon et al., 2013). According to focus group discussions, pregnant women in Nigeria felt that it could be dangerous to breastfeed since toxins could be passed to the infant through breastmilk (Nigeria: Davies-Adetugbo, 1997).

Several conditions or circumstances were cited as altering the quality of or “contaminating” breastmilk. In most cases, these were tied to the mother’s state of health and/or her presumed behaviours. The following causes of breastmilk contamination were mentioned: eating contaminated or forbidden foods, drinking contaminated water, engaging in sexual intercourse, being sick, menstruating, being pregnant, and living with HIV. Breastmilk could be spoiled from being ‘warm’ or ‘hot’, also owing to the heat from the sun and/or the heat generated from long hours of farm work, walking or of being away from the baby (this is because the breastmilk stays in the breast for too long) (Gambia: Semega-Janneh et al., 2001). In Chad, according to a focus group of grandmothers living with children 0-5 years, *“The occurrence of a new pregnancy systematically leads to the cessation of breastfeeding and thus the abrupt weaning of the child.... No, you have to stop breastfeeding in case of pregnancy for fear that the child will get sick. It can get diarrhea, become very thin, and even die.”* (Chad: Aboubacar, 2017).

## Perceived costs of exclusive breastfeeding

The perception that breastfeeding was inconvenient, stressful, and time-consuming emerged in several studies. This was especially true for mothers engaged in activities outside of the home, including work and/or school (Chad: Aboubacar, 2017; Nigeria: Aniebue et al., 2010, Ella, 2016, Okolobiri and Peterside, 2013, Ukegbu et al., 2011; Ghana: Danso, 2014, Mogre et al., 2016; Gambia: Semega-Janneh, 2001). Qualitative research in Southern Nigeria found that most women felt tied down by breastfeeding with loss of freedom to move around, restrictions to activities, restrictions to fashion/style, and expressed concerns over having to dress appropriately to breastfeed, particularly in public. *“I was not having any time of my own, even if I am in the bathroom having my bath, she would be busy crying, so whatever I am doing, I time myself to be fast so that the next thirty minutes I am there to attend to her.”* (Nigeria: Ogbonna et al, 2018).

Certain studies reported on women restricting or stopping breastfeeding to prevent possibly harmful impacts breastfeeding would have on their body. This included not only the pain breastfeeding may cause (Ghana: Aborigo et al., 2012; Nigeria: Ella, 2016; Cameroon: Kakute et al., 2005) but also the changes in the shape and attractiveness of their breasts and/or figure (Nigeria: Aluko-Arowolo, 2012; Udoudou, IO, 2015).



## Infant attributes

Certain attributes of the infants and their birth were associated with a lower likelihood of exclusive breastfeeding. These were characteristics related to infant age, sex, and birth conditions.

### Age

Many quantitative articles confirmed the common trend of exclusive breastfeeding decreasing as the infant's age increased (Burkina Faso: Cresswell et al. 2017; Cameroon: Fombong et al. 2016 ; Ghana: Sika-Bright S, s. d.; Diji et al. 2016; Côte d'Ivoire: Coulibaly et al. 2014; Nigeria: Jacdonmi et al. 2016; Gayawan, Adebayo, et Chitekwe 2014; Onah et al. 2014; Oparocha, Ibadin, et Muogbo 2002).

### Sex

Studies from Nigeria and Cameroon found that if the child was male, the infant was less likely to be exclusively breastfed (Nigeria: Agho et al., 2011; Cameroon: Kakute et al., 2005). This could be related to the practice of initiating complementary feeding before age six months to help the baby grow bigger, which could be perceived as a sign of good health (Ghana: Agani et al., 2017; Nigeria: Agunbiade, 2012; DRC: author unknown, 2014). In a qualitative study involving 60 breastfeeding mothers in rural areas of Enugu State Nigeria, Okafor and colleagues found that most mothers were of the opinion that breastmilk was not enough, especially for male infants (Nigeria: Okafor et al., 2018).

### Premature babies and multiple births

Data from Nigeria indicated that mothers who gave birth to premature babies, had a multiple birth (e.g., twins or triplets), or had a short birth interval (less than two years) were less likely to exclusively breastfeed (Nigeria: Nnorom et al., 2018; Nigeria: Okolobiri and Peterside, 2013; Nigeria: Fehintola et al., 2016).

## Mother-infant interactions during breastfeeding

Moment-by-moment interactions between a mother and her baby can guide breastfeeding behaviours (Rollins et al., 2016). Many of the studies reviewed confirmed that infant feeding cues (e.g., crying, fussiness, putting their hands in their mouths) were interpreted differently by mothers and family members depending on their beliefs, the infant's health status, and the infant's temperament.

According to the focus groups in Ghana, mothers and other caregivers interpreted crying or fussing after breastfeeding as signals indicating that the child was still hungry, suggesting that the mother's breastmilk was insufficient. When breastfeeding is suboptimal, local healers are called upon to assist and recommend supplemental feeding (Ghana: Aborigo 2012). In response, mothers and caregivers gave the infants water, other liquids, or foods to satiate, appease the baby, and prevent hunger. This practice was apparent mainly around three or four months old, a time of growth spurts (Ghana: Otoo et al., 2009). Another qualitative research study from Ghana noted that mixed feeding was introduced in some families around the same age when breastmilk alone was perceived to no longer meet the child's needs. At this age, exclusive breastfeeding could be viewed as dangerous or cruel (Ghana: Laar et al., 2011).





## Setting-level determinants

Findings from the review highlighted that in many countries the decision to exclusively breastfeed was shaped by the mother's family and community, health systems and services, and workplace and employment. Important influencers included the woman's mother and mother-in-law, aunts, sisters, peers, spouses, sometimes fathers in law, traditional healers and birth attendants and health care workers. Sources of spiritual support for breastfeeding mothers, such as religion, were also be called upon by mothers particularly at times of breastfeeding difficulty.

## Family and community

As reported by numerous studies, the most influential person impacting breastfeeding behaviours was a close, experienced and senior female member in the household and community (Senegal: Faye, 2007). The dominant role of women in providing support and guidance around breastfeeding behaviours and other aspects of child-care is well-described in the extract below from Aboubacar's 2017 anthropological study in Chad. This was a common feature shared in all reports included in the qualitative literature review. "As far as breastfeeding is concerned, the support given to the mother within the family and the community is almost identical in all the ethnic groups surveyed: whether it is in terms of practical advice or in terms of daily support in the tasks of caring for the child, we are in an environment that is overwhelmingly dominated by women. These are the newborn's grandmother (mother or mother-in-law of the mother), the newborn's aunt (generally the sister of the mother, very rarely her sister-in-law), the mother's neighbor or friend, and the mother's oldest daughter." According to a focus group of community leaders in Ngambaye, Chad: *"A newborn can survive for 6 months without water, the child can survive on just milk for 6 months if the wife is monitored, and if the husband and grandmother are aware [accept]."* (Chad: Aboubacar, 2017).





## Grandmothers

Women influencers not only set expectations regarding infant feeding and care within the family but also enforced wider traditions and social norms reflecting expectations from the larger community. In numerous studies, the infant's grandmother, especially on the father's side, was identified as playing a particularly powerful role in enforcing or prohibiting exclusive breastfeeding due to her status in the family and experience with childcare (Ghana: Atindanbila, year unknown; Ghana: Iddrissou, 2013; Niger: Keith, 2007; Mauritania: Keith, 2009; Nigeria: Okafor et al., 2018; Nigeria: Sani, 2014; Senegal: Faye, 2007).

Grandmothers were responsible for: guiding or coaching the new mother and deciding on the best infant feeding and care practices, ensuring compliance with traditions and social expectations, caring for the baby (especially during a mother's absence) and monitoring the infant's health, growth and overall development (Global: Aubel, 2012). Results from quantitative and qualitative studies highlighted that younger and first-time mothers were more likely to follow the advice and guidance of elder women around them (Benin: Imorou et al., 2012; Nigeria: Agunbiade et al., 2012; Nwankwo et al., 2002). According to qualitative research conducted in Mauritania, grandmothers monitor the growth of the child. If the child does not grow, the grandmother decides how to feed it, what type of food to give, etc. (Mauritania: Keith, 2009). In a qualitative research study in Ghana, a mother declared, *"I will breastfeed for six months because my mother-in-law will not even allow me to do it less than six months. She has been telling me not to give the baby anything apart from the breast milk, but in the case of my first child, he was given water and porridge before six months because I had to travel to my parents to deliver."* (Ghana: Atindanbala, et al., 2014).

## Fathers

Fathers also played a role in influencing breastfeeding practices, either because they were the decision-makers in the family and were responsible for maintaining norms and traditions and establishing family practices (Nigeria: Okafor et al., 2018; Sani, 2014; Senegal: Faye, 2007; Ghana: Agani et al., 2017) or because they were the primary financial providers, determining access to health care services and foods (Benin: Imorou, 2012; Chad: Aboubacar, 2017; Ghana: Agani et al., 2017). According to research in Chad, the child's father holds all decision-making power when it comes to the child (e.g., giving a name to the child, proceeding with rituals, and accepting a medical evaluation or adopting practices recommended by health workers (Chad: Aboubacar, 2017). Similar findings were reported in Senegal, where according to the midwife, *"Women who come to give birth do not accept any instructions without the approval of their husbands."* (Senegal: Faye, 2007). According to Agani and colleagues who conducted in-depth interviews with rural women in Ghana, *"in traditional African settings, men are the main decision-makers of the family, and the community studied was no exception. It is a belief and practice in the participants' communities that women should respect and follow their husbands' orders to the core, and this includes infant feeding. In this study, fathers did not support EBF. They used their role as family heads and breadwinners to control feeding practices in the family."* (Ghana: Agani et al. 2017).

A husband's beliefs can both positively and negatively impact exclusive breastfeeding practices. In the previously mentioned study by Okafor and colleagues among nursing mothers in rural Nigeria, one of the women said, *"my husband knows how important exclusive breastfeeding is to our baby. He also encourages me to do this baby-friendly because he does not want me to lose my shape and my menses to come quick."* Another woman disclosed how her husband supported giving water in conjunction with breastfeeding: *"My husband is in support of breastfeeding practice but not without water and I don't have any problem with that. I respect my husband and I trust his judgement."* (Nigeria, Okafor et al., 2018). Alternatively, according to mothers in focus group discussions in Ghana, *"My husband gave my baby local concoctions when it was around two months old. I told him about the nurses' advice to exclusively breastfeed, but he never listened."* (Ghana: Laar et al., 2011) As principal financial providers, fathers could hinder or facilitate access and utilization of maternal, newborn, and infant health care services and providers.

## Peers

Women reported receiving support and guidance on breastfeeding from female friends. Peers served as role models, trendsetters, and trusted advisors. Several studies showed that women reported having the intention or the courage to breastfeed if they were previously exposed to positive examples and the advantages of exclusive breastfeeding, either from personal experiences with older children or from the experiences of other female community members (e.g., through support and/or community groups) (Nigeria: Coetzee et al., 2017; Niger: Oumarou et al., 2012).

However, peers can also negatively influence breastfeeding behaviours, as shown in this excerpt from a study in Ghana: *"I was confused at a point because all my friends (started mentioning names) were feeding their babies from feeding bottles, and I fancy it. I think it makes you modern when you do that, so I also copied it."* (a 17-year-old unemployed woman with a 6-month-old baby girl) (Ghana: Sika-Bright, 2014).



## **Communities/Local healers**

Residing in a community that actively supported exclusive breastfeeding was listed as a facilitator of exclusive breastfeeding (Benin: Imorou et al., 2012; Niger: Oumarou et al., 2012). For example, in a village in Niger, pregnant women would make a solemn oath to exclusively breastfeed in the presence of their husbands at village gatherings. After birth, the community worker would remind the new mother of her commitment to exclusively breastfeed her child (Niger: Oumarou et al., 2012). On the contrary, local leaders can also harm EBF practices; for example, in Ghana, grandmothers in a focus group mentioned that local healers often recommend supplemental feeding if an infant is not breastfeeding well (Aborigo et al., 2012).

## **Health facilities and health care workers**

Access to and utilization of maternal health care services and interactions with healthcare workers positively influenced exclusive breastfeeding, as shown in the studies below.

### ***Use of health services***

Uptake of maternal health services (antenatal, delivery, and postnatal) positively influenced exclusive breastfeeding practices (Nigeria: Agho et al., 2011; Ghana: Aidam et al., 2005a). Exclusive breastfeeding rates were higher among infants whose deliveries were assisted by health professionals compared to those mothers who were assisted by traditional birth attendants or untrained attendants (Nigeria: Agho et al., 2011; Lawoyin et al., 2001; Oparocha et al., 2002; Ghana: Saaka et al., 2013).

### ***Type of delivery***

The type of delivery was also an influencing factor: mothers in Ghana who had a vaginal delivery were more likely to practice exclusive breastfeeding than those with caesarian delivery (Ghana: Dun-Dery and Laar, 2016).

## **Health care worker support**

Results showed that health care workers play a significant role in influencing and supporting breastfeeding practices, both positively and negatively. Health care workers were described as providing guidance and support for breastfeeding during key moments before and after birth (Chad: Aboubacar, 2017; DRC: Klemm et al., 2012; Ghana: Aborigo et al., 2012; Otoo et al., 2009; Nigeria: Okafor et al., 2018; Coetzee et al., 2017; Sani, 2014). A study conducted in Nigeria found that mothers who gave their infant's breastmilk as the first feed were three times more likely to practice exclusive breastfeeding than mothers who gave water and/or water-based solutions as the first feed to their infants (Nigeria: Onah et al., 2014).

Several qualitative studies portrayed health care workers as being generally well respected by women and their families. Through effective interpersonal communication, health care workers in facilities and communities were able to shift family practices in favour of exclusive breastfeeding. A study conducted in Niger reported that the interpersonal communications sessions organized by community health workers helped mothers overcome the resistance from grandmothers for mothers to exclusively breastfeed. Grandmothers who had tried to "boycott" EBF were overruled thanks to information provided during interpersonal communication sessions (Niger: Oumarou et al. 2012).





Other studies reported that health workers' counselling and support was insufficient (Cameroon: Amani, 2015; Chad: Abouacacar, 2017; Ghana: Obeng et al., 2015). Reported gaps in health care workers' understanding, skills, and practices included:

- Sharing inconsistent or incorrect recommendations on exclusive breastfeeding (Chad: Amani et al., 2015; Benin: Imorou et al., 2012; Ghana: Otoo, 2009; Senegal: Faye, 2007). In some countries, changes in exclusive breastfeeding protocols and EBF recommendations within health centres could also confuse health workers (Benin: Imorou et al., 2012; Senegal: Faye, 2007).
- Communication barriers due to language and understanding (Chad: Amani et al., 2015).
- Low self-efficacy in addressing and changing social norms and family practices. Several qualitative studies discussed apparent contradictions between evidence-based public health recommendations and the deep-rooted lay beliefs and social norms that drive family practices. Both belief systems were justified by a shared desire to ensure the optimal health and development of the infant. This conflict in belief systems was identified as leading to feelings of frustration and helplessness among health care workers and mothers and families, concealing what really happens in homes when asked by health care workers. Some health care workers in Niger, for example, admitted to feeling helpless to change behaviors related to EBF (Niger: Oumanou, 2012). In Burkina Faso, one

of the respondents mentioned, *"The health workers told us not to give water, but ah! (Laughing), we weren't able to do that, you see?"* (Burkina Faso: Combassere et al., 2015). Similarly, in Ghana, according to a focus group respondent, *"They [health workers] have told us that the baby should not drink water until six months, but some will ignore that and still give the baby water."* (FGD grandmother) (Ghana: Aborigo et al., 2012). Researchers in Benin remarked: *"The cover-up (concealment) by children's mothers when they are in front of health workers or community relays. Instead, we are witnessing a piling up of logical reasoning that leads to hybrid practices that are no longer based on either biomedical knowledge or local constructions. In reality, the midwife has little influence on the actual adoption of the practice once the mothers have returned to their families."* (Benin: Imorou et al., 2012).

- The misconception among health care workers that breastfeeding is innate, as illustrated from a study carried out in Mauritania. *"Breastfeeding, it is innate, you know... systematic... We don't need to explain to the woman why... I think so. She's just gonna give him the breast because in the first twenty-four hours, there is no milk, it's just the surge of the colostrum. (...) So... there will be more proteins, antibodies and all that... And she has to give it to him otherwise her breasts will be swollen. It's innate."* (Physician) (Mauritania: Kane, 2016).

## Workplaces

Working outside the home was negatively associated with EBF in numerous studies as women are often unable to leave their work to feed their children or lack the time, space, and support to express milk and store it for their infant (Benin: Imorou et al., 2012; Burkina Faso: Combassere et al., 2015; Cameroon: UNICEF, 2017; Amani, 2015; Gambia: Semega-Janneh et al., 2001; Ghana: Nkrumah et al., 2016; Intifal et al., 2017; Otoo et al., 2017; Sika-Bright et al., 2014; Mali: Dettwyler, 1988; Mauritania: Keith et al., 2009; Niger: Keith et al., 2007; Nigeria: Aluko-Arowolo et al., 2012; Tyndall et al., 2016; Sierra Leone: MacMahon et al., 2013).

A study in Gambia describes how in the past rural women would take their breastfed infants to the fields while they are working. Today, they no longer do that. One mother said: *“We leave them behind so that we can work faster because taking our child along would cause delay in the work.”* (Gambia: Semega-Janneh, 2001). Similarly, in a study conducted in Chad a father mentioned: *“Having a child that only takes breastmilk up to the age of six months would be possible, but not for women who need to work in the fields.”* (Fathers of children aged 0 to 5 years) (Chad: Aboubacar, 2017). In a study from Burkina Faso, a food vendor discusses the difficulty of trying to breastfeed while working: *“If I go out and want to focus on my work, my baby isn’t going to nurse well. Myself, if I concentrate on my work, I am not even going to eat two times, much less four or five times; and my baby there too, if I focus on my work, I am not even going to sit down much less that he is going to nurse.”* (Burkina Faso: Combassere et al., 2015).





## Structural level determinants

Structural-level determinants that influence breastfeeding include social trends that affect whole populations (e.g., advertising, media) as well as policy interventions (e.g., maternity and workplace policies, regulations to restrict marketing of breastmilk substitutes, baby-friendly hospital certification, etc.) to change social attitudes and practices. While structural interventions are critical in removing the barriers that many women face, little research has been done on this in low- and middle-income countries, including the West Africa region (Rollins et al., 2016).

### National policy

As mentioned above, quantitative and qualitative findings from numerous studies and multiple countries identified maternal work outside the home as a key barrier to exclusive breastfeeding. Studies from around the world have found that breastfeeding-friendly policies that include paid maternity leave, lactation rooms and lactation breaks, flexible work schedules, on-site or nearby childcare, etc. are important to creating a supportive enabling environment for exclusive and continued breastfeeding (UNICEF, 2019a). One example of this impact came from a study in Ghana that found that mothers who received maternity leave for three months or more were more likely to exclusively breastfeed than mothers who received less than three months of maternity leave (Ghana: Dun-Dery & Laar, 2016).

## Social trends: 'Water is life'

The hot and dry climate of West and Central African countries played a significant role in preventing exclusive breastfeeding practices owing to the pervasive belief that infants, just like adults, need to consume water to quench their thirst (Burkina Faso: Combassere et al., 2015; Chad: Aboubacar, 2017; Ghana: Agani et al., 2017; Sika-Bright et al., 2014; Mauritania: Kane, 2016; Keith, 2009; Niger: Keith, 2007; Oumarou et al., 2012; Nigeria: Coetzee et al., 2017, Davies-Adetugbo, 1997; Sani, 2014; Senegal, Faye, 2007). The social expectations related to this practice and fears of life-threatening repercussions should water not be given suggests that this is a social norm in numerous West and Central African communities, particularly in countries in or bordering the Sahel. According to a mother of a four-week-old in Mauritania, *"I do give my child water when it's hot. I buy a bottle of mineral water and give it to him. Otherwise it is not safe."* (Mother of a four-week-old newborn) (Mauritania: Kane, 2016).





## IV. Factors influencing giving infants water, herbal teas and other liquids before six months

Consistent with quantitative findings from sources such as Demographic Health Surveys and Multiple Indicator Cluster Surveys, giving infants water in the first days of life was cited as a common practice in much of the literature reviewed.

Other types of supplementation were also cited in the qualitative literature, including giving herbal teas, animal milk, formula and soft foods. In some places, plain water was considered the first drink a baby should receive (Burkina Faso: Combassere, 2015; Chad: Aboubacar, 2017; Gambia: Semega-Janneh et al., 2001; Mauritania: Keith, 2009). Beyond the first few days of life, caregivers introduced water in the first, second or third month of life. In a study on infant feeding in the first six months conducted in Senegal, the regional president of the Association for the Promotion of Women (Groupement de promotion féminine) declared: *“If the child has not yet started drinking water after two months, a test is carried out whereby we drip some water on the mouth, if the child holds out his/her tongue that means he/her wants to start drinking. From that point in time, we give the child water when s/he cries because the mother’s milk is too salty, and the baby doesn’t want to suckle it.”* (Interview with the regional president GPF) (Senegal: Faye, 2007).

The reasons for giving water, herbal remedies and/or other liquids or foods were multiple and are described in the following sub-sections.



## Beliefs and traditions at birth

Giving newborns water and other liquids in the first days of life was mentioned in almost all references included in the qualitative review. Three main reasons for introducing water in the first days of life were described.

- *Water is an alternative to colostrum.* In some communities, colostrum was believed to be dirty and potentially dangerous. Newborns were fed with water, sugar water, herbal teas, or other liquids at birth and until the “good breastmilk” came in (Cameroon: Amani, 2015; Chad: Aboubacar, 2017; Guinea-Bissau: Gunnlaugsson et al., 1993; Mauritania: Kane, 2016; Senegal, Faye, 2007).
- *Water and herbal concoctions protect the baby.* Some studies reported on the belief that it was necessary to give newborns water or herbal concoctions to protect them from harm, bad luck, or evil spirits. Traditional healers and other community members knowledgeable in traditional healing practices gave newborns herbal teas in the first days of life. These concoctions were believed to purge and protect the newborn from illness and/or evil spirits and to foster strength and good health (Chad: Aboubacar, 2017; Ghana: Agani et al., 2017; Mauritania: Kane, 2016). A qualitative study among rural women in Ghana found that newborns are given a ritual bath after delivery to keep them from getting sick. *“The baby is bathed with some herbs and is made to drink some, if the baby is a boy, he is made to drink it for three days and if a girl, she is bathed and fed with the prepared concoction for four days.”* Concoctions seem to be mixed with breastmilk or porridge and fed to the baby to make the baby grow strong (Ghana: Agani et al., 2017).
- *Holy water or plain water welcomes the newborn.* Research from some countries showed that during traditional ceremonies, the newborn received a few drops of holy water, plain water, or with a mashed date to welcome the child and to ensure a happy and healthy life (Burkina Faso: Combassere et al., 2015; Chad: Aboubacar, 2017; Gambia: Semega-Janneh et al., 2001; Niger: Keith, 2009; Oumarou et al, 2012; Senegal: Faye, 2007; Nigeria: Ojofeitimi et al., 1999).

## Water as an alternative or substitution for breastmilk

The qualitative research found many reasons why a mother may be compelled to give her baby water during the first six months of life; in some cases, despite her initial intention to exclusively breastfeed. These reasons are presented below.

- *Water is an alternative when there is ‘not enough breastmilk.’* Women gave infants water (and other liquids or foods) when they believed they did not have enough breastmilk to feed their child adequately. Women (and their families) were prompted by cues from the baby such as crying, especially just after having been breastfed, not breastfeeding well, wanting to suckle frequently; all of which were perceived as signs that the baby was not getting enough milk and that other foods or liquids should be given. In addition, if a baby was suffering from colic or not gaining enough weight, mothers and other families members also took those as signs that a women's milk supply was insufficient to satisfy the baby's hunger (Ghana: Otoo et al., 2009; Aborigo et al. 2012, Laar et al., 2011; Niger: Keith, 2007; Cameroon: UNICEF, 2017).
- A grandmother in a focus group conducted with rural northern Ghana reported that although *“some women will say they have heard the law [guidelines regarding exclusive breastfeeding], but since she has not got enough breastmilk to feed the baby, what will she do; they will still give the water and herbs to supplement the breastmilk.”* (Ghana: Aborigo et al., 2012). Similarly, qualitative research in Cameroon found that the perception that breastmilk does not flow sufficiently can lead mothers and families to give water, sugar water, or a bottle to the baby so that he is not hungry. According to a mother, *“Sometimes milk doesn't flow well and the when the baby cries too much we have to buy water and put a piece of sugar in the water before giving it to the baby.”* (Cameroon: UNICEF, 2017).

- *Water is a necessary accompaniment to breastmilk.* In some countries, women and families believed that breastmilk is hot, oily, sweet, or salty, making the supplementation of breastmilk with water to quench thirst necessary (Niger: Keith, 2007; Senegal: Faye, 2007; Benin: Imorou et al., 2012). In Senegal, for example, communities felt that because breastmilk is salty, it needed to be diluted so that it does not dry out the child's throat. A village chief said, "We give water from birth. The baby needs to drink because he is thirsty from time to time like adults." (Senegal: Faye, 2007) Reporting on results from a knowledge, attitudes, and practice study conducted in the Maradi region of Niger, Keith wrote that "women say that milk is "sweet" while water is not, and that milk makes the child thirsty. They cannot imagine giving milk and not following the milk with water." (Niger: Keith, 2007).
- *Water is an alternative when there are concerns with contaminated breastmilk.* Numerous studies reported that the bad quality of breastmilk, because it had been contaminated, was a reason to either stop breastfeeding or supplement breastmilk with water, other liquids and/or soft foods (Chad: Aboubacar, 2017; Niger: Keith, 2007). As discussed earlier, there were multiple reasons for which the quality of breastmilk could be compromised (see 'Quality of breastmilk, p. 22).
- *Water is an alternative when the mother is absent.* In several countries, water is given to infants when the mother is away from home (Cameroon: Chiabi et al., 2011; Burkina Faso: Combassere et al., 2015; Cresswell et al., 2017).
- *Every child has a right to water.* Given hot and dry conditions, giving plain water was considered necessary for everyone—including infants—to prevent dehydration, protect them from harm, and for survival. The perceived risks associated with not giving water to

infants were thought to be life-threatening (Chad: Aboubacar, 2017; Mauritania: Keith, 2009; Niger: Oumarou et al., 2012; Gambia: Semega-Janneh et al., 2001). According to a study in Mauritania, "Water is the human being. You have to see how a thirsty person behaves. Water is life. If you don't give water, your child cries and you don't know if it's from thirst. You say he is sick, you take him up to Nouakchott when, in fact, it is thirst. What do you expect from this? (...) When my child is 3 or 4 weeks old, I take water with my fingers and I drop drops into his mouth until his throat is wet. Slowly, until he can drink from a cup. To leave the belly dry, I can't do it. (...) Thirst kills." (Traditional female healer) (Mauritania: Kane, 2016).

### Water to promote infant health and care

- *Water cleanses and stimulates the baby's appetite.* Plain water was given to either stimulate the baby's appetite or to clean the infant's palate after breastfeeding (Ghana: Aborigo et al., 2012; Niger: Keith, 2007).
- *Water calms the baby.* Women and family members reported giving the infant water or other liquids/foods when the baby cried to calm him or her. Certain liquids such as gripe water or fruit juice were also given to an infant when the caregiver believed they had stomach ache (Senegal: Faye, 2007).
- *Water quenches thirst.* Water was frequently given to quench babies' thirst. Many mothers and family members reported not believing that given its nutritional quality, breastmilk alone was enough to keep their baby hydrated (Burkina Faso: Combassere et al., 2013; Ghana: Agani et al., 2017; Mauritania: Kane, 2016; Mauritania: Keith et al., 2009; Niger: Oumarou et al., 2012; Keith, 2007; Nigeria: Coetzee et al., 2017; Davies-Adetugbo, 1997; Sani, 2014; Senegal: Faye, 2007).



## Herbal remedies given to prevent disease and treat infant illnesses

Giving infants traditional remedies was a frequently reported practice in the qualitative literature reviewed. Herbal remedies were given from birth to ensure the health and development of the baby.

Often prepared by traditional healers or elders within the family, these remedies were described by authors using a variety of terms: herbal teas, herbal brews, or concoctions, or using local terms such as *bauri*.<sup>5</sup> The ingredients used to prepare herbal remedies were not always known but could include leaves, roots, oil and/or bark from plants and/or trees.

Herbal remedies were given to:

- cleanse the newborn's stomach (Cameroon: MOH, 1994; Niger: Oumarou et al., 2012);
- prevent stomach aches, allergies, and other illnesses (Nigeria: Agunbiade et al., 2012; Cameroon: MOH, 1994);
- treat the infant who was perceived to be sick or in distress (Cameroon: author unknown, 2017);
- fortify or strengthen the infant (Combassere et al., 2015);
- help the baby sleep (Niger: Keith, 2007); or
- prevent poor infant growth, particularly if the baby was not gaining enough weight (Ghana: Agani et al., 2017; Niger: Keith, 2007; Nigeria: Mbada et al., 2013; Senegal: Faye, 2007), or malnourished (Nigeria: Ella, 2016).

## Social norms regarding giving water lead to adaptive behaviors

The gap between high levels of awareness of exclusive breastfeeding recommendations and low levels of adoption and maintenance of the recommended behaviour can be explained by parents and family members' perceived benefits of giving water and the strong social norms around giving water for the multitude of reasons stated above. Results from this review indicate that the practice of giving water was supported by traditional justifications and social expectations expressed by respected elders and many adults in the family and communities. As found in the Ghana study by Otoo et al. (2009), elders tended to disapprove of exclusive breastfeeding: *"Because ancient people gave their babies water and they lived. So why can't ours live now?"* (Ghana: Otoo et al., 2009).

The authors described how the contradictions between evidence-based public health recommendations and the deep-rooted lay beliefs and social norms regarding giving water that drive family practices led to several adaptive behaviours within families. In the Ghana focus groups with peri-urban women, for example, women remarked, *"The water itself might not be clean and this can cause sicknesses. I think this is the reason why nurses say we shouldn't give water. But if you can make water neat and give, in my opinion, it's not wrong."* (Ghana: Otoo et al., 2009).

<sup>5</sup> Bauri is a tea made from roots and bark and is used for many purposes for both the health of mothers and of children (Niger: Keith, 2007).



Other studies highlight how some families do not follow the instructions they were given on infant feeding. In Ghana, for example, a grandmother said: *"I heard something like that on one occasion when I visited the Savelugu Hospital and we were told not to introduce water to the babies until 6 months later. I didn't say anything, what I did was to remain silent about it and continued to give small quantity of water to him each time I bathed him. Water adds energy to the body so if you don't give the child water, he/she will continue to remain light weighted."* In the study, a mother remarked: *"I always make sure I'm present when my baby is being bathed so he has never been given water... because they are old people, if you are not around, they may be tempted to do it."* (Ghana: Iddrissou, 2013).

Some mothers say they carry out proper infant feeding behaviours even if they do not. According to a mother in Burkina Faso, *"Here then, if you aren't going to hide, for 3 months without giving him water I didn't tell anyone. Otherwise, if something happens to your baby people will say that that it was your incorrect knowledge that provoked it. Or someone else can take him and without your knowledge he will have already drunk the water given him. If the baby refuses, they are going to ask you if you haven't been giving water to your baby. That when you give water to the baby it widens his mouth and such. So you are obliged to say that you give [water]."* (Burkina Faso: Combassere et al., 2015).





## V. Discussion

The conceptual framework from the 2016 Lancet Series on Breastfeeding identified three interdependent and interrelated levels of determinants that influence breastfeeding: Individual, Setting, and Structural (Rollins et al., 2016).

While many findings from the review are well known to breastfeeding researchers and other public health professionals, the review adds value to the field's understanding of the determinants of exclusive breastfeeding in the unique setting of West and Central Africa and the drivers behind the ubiquitous practice of giving water. Key areas emerged, which deserve particular attention when designing, implementing, and monitoring exclusive breastfeeding programmes in the region. These include:

**There is room to improve understanding of exclusive breastfeeding.** There were indications that the global recommendation of “exclusive breastfeeding in the first six months of life” was not always clearly understood by mothers. Some women thought they were exclusively breastfeeding when they were actually not doing so. Lack of understanding regarding what it means to “exclusively” breastfeed were noted as barriers to EBF in both quantitative and qualitative studies.

**While maternal self-efficacy and intention were key determinants of exclusive breastfeeding, numerous breastfeeding women were found to have limited autonomy regarding infant feeding and care within family systems.** Studies from multiple countries reported that women who intended to exclusively breastfeed and made plans to do so were more likely to succeed. However, findings from the review revealed that exclusive breastfeeding required support from a mother's close environment – her family and health system. Infant feeding was often not an individual matter but one that involved a number of influential people in the mother's home, social network and community. Numerous people in her close entourage influenced infant feeding and care practices, including grandmothers, fathers, traditional healers, traditional birth attendants, and peers. Younger and first-time mothers were particularly vulnerable to family and community influences. Quantitative data showed that younger and first-time mothers were less likely to exclusively breastfeed in some countries.



**Some social norms and traditional beliefs weighed heavily against exclusive breastfeeding.** Overall, studies showed that breastfeeding was viewed in a positive light, as a social norm, and a symbol of 'good' motherhood, with numerous benefits for the baby. However, results from the review disclosed several established social and cultural practices deeply rooted within families and communities, and internalized by mothers, which contradict exclusive breastfeeding. They included:

- The belief that breastmilk was hot, oily, sweet, salty or food (as opposed to drink/liquid), requiring it to be supplemented with water to counteract the hot and dry climate and hydrate the baby.
- The belief that breastmilk could be spoiled – either because of its colour and/or texture (of colostrum specifically), or because of conditions related to the mother (e.g., the mother ate contaminated or forbidden food, was menstruating, or was pregnant), or due to hot/dry temperatures – were justifications for supplementation and an obstacle to exclusive breastfeeding.
- At birth, 'testing' the quality of breastmilk before giving colostrum, and avoiding colostrum giving.
- At birth, welcoming the baby by feeding him or her holy water or plain water (and sometimes using bottled water to ensure that it is 'safe').
- Women's misperceptions that the quantity of breastmilk they produced was not enough to feed an infant under six months, leading to the adoption of feeding water, other liquids or soft foods depending on the infant's age.
- The social expectation of giving water to quench infant's thirst and ensure his/her survival in hot and dry weather. With this reasoning, the perceived risks related to not giving water and benefits of giving water far outweigh the perceived risks of giving water to the breastfed infant.
- Favoring herbal remedies and concoctions to ensure the infant's health and well-being, prevent health problems, and/or treat illness.

**The infant's behaviour or appearance persuaded mothers, and other family members, of the need to give the baby water, other liquids or foods to satisfy her (or him).** The following manifestations signalled the need to supplement breastmilk: infant crying (especially crying just after having been breastfed); infant not breastfeeding well; infant wanting to suckle frequently (particularly at three to four months of age); infant not sleeping; infant suffering from colic; and infant not gaining enough weight.

**Grandmothers were found to be the closest and most influential people regarding infant care and feeding, including breastfeeding, in most families.** The 'grandmother' is defined as the elder, experienced female member of a mother's household and community (Aubel et al., 2012). Grandmothers' decisions and recommendations, whether in favour or not of exclusive breastfeeding, were rooted in their beliefs and experiences and motivated by the desire to maximize infant health and development and minimize risks. The practice of breastfeeding was described as a learned behaviour (as opposed to an innate one), which is passed on through experience-sharing and tutoring from one generation to the next.

**Gender dynamics played a role.** Specific concerns of young mothers related to body image and shape were an obstacle to exclusive breastfeeding in some settings. Breastfeeding was perceived as damaging the shape of their bodies and breasts, which could result in their husbands' or partners' loss of interest and attention. Gender roles within the household could also play an important role in infant feeding practices in some settings, with fathers having the ultimate decision-making authority around changing family practices, including infant and young child feeding.



**Health workers were well-respected, but their role was challenged by contradictory social norms and belief systems.** On one hand, quantitative findings confirmed the positive influence of access to maternal health care, exposure to breastfeeding counselling and early initiation of breastfeeding on exclusive breastfeeding. However, qualitative findings unveiled gaps in knowledge, skills, and practices among health care workers; gaps that affected breastfeeding counselling and support. In addition, studies showed some health workers felt powerless to stop unwanted infant feeding behaviours given the deep-rooted beliefs related to giving water and other traditional practices (e.g., providing herbal remedies) that some families were unwilling to change.

**Women's work was a significant obstacle to exclusive breastfeeding.** Findings confirmed that work – both income-generating (in formal and informal settings) and within the household – impeded exclusive breastfeeding in the absence of access to childcare and workplace support and policies. It prohibited mothers from breastfeeding or expressing milk due to a lack of time, space, and support.

Among the various reasons for giving water cited in the literature, the belief that giving water quenches babies thirst and that 'water is life' in the hot and dry climate of West and Central Africa, coupled with perceived breastmilk attributes (salty, hot, food, etc.), were found to be some of the important determinants that drive the ubiquitous practice of giving water, particularly in the Sahel sub-region. Providing water was the primary obstacle to exclusive breastfeeding in many West and Central African countries. While it is impossible to change the climate, it is possible to shift perceptions, expectations and ultimately social norms related to the necessity of giving infants water in the first six months of life and address other barriers to exclusive breastfeeding through evidence-informed social and behavioral change interventions, which engage families, communities and the whole of society. There is growing public health research and evidence related to social norm change, which can be drawn upon to address this issue.





## VI. Limitations

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There were various limitations to this literature review.

- The review was restricted to: a) search engines that provide access to open-source peer-reviewed publications and b) published and grey literature shared by partners.
- Published and unpublished literature collected concerned 19 of the 24 countries belonging to UNICEF's West and Central Africa region. The greatest proportion of studies (68 percent) were conducted in Ghana and Nigeria (153 out of 225). Many of the other countries were represented by less than five studies each.
- Reviewers did not take into consideration the type of statistical analysis conducted for the quantitative findings or the quality (i.e., strength of findings) of the qualitative and quantitative research in the inclusion criteria.<sup>6</sup>
- Qualitative data was collected among a small number of respondents belonging to specific communities making it difficult to generalize findings to other communities or population segments.

<sup>6</sup> An assessment of the quality of quantitative findings could be undertaken in the future.



# VII. Conclusions and recommendations

This report provides a comprehensive review of peer-reviewed and grey literature on the social and behavioural determinants of exclusive breastfeeding and other feeding practices during an infant's first six months of life in West and Central Africa. The review included 19 of the 24 countries of UNICEF's West and Central Africa Region (see Annex B for a list of the countries included). Its findings draw attention to the multiple drivers and barriers to exclusive breastfeeding in the region and the various determinants of the practice of giving water to infants in the first six months of life.

The review underlines the importance of identifying and understanding the motivations of the people who influence infant feeding and

care practices and the factors that influence exclusive breastfeeding and other infant feeding practices in the first six months of life when designing interventions to protect, promote and support breastfeeding. Implementation of social and behavioural change interventions grounded in this understanding is needed to tailor respectful, genuine, and acceptable responses to the families and communities for whom they are designed. Findings from this comprehensive literature review provide evidence to inform the design of the Stronger With Breastmilk Only regional initiative (see Box 1) to strengthen exclusive breastfeeding programmes by addressing the social and behavioural determinants of giving water.

## BOX 1: THE STRONGER WITH BREASTMILK ONLY INITIATIVE

The Stronger With Breastmilk Only initiative promotes giving babies breastmilk only, on demand (day and night), and stopping the practice of giving water (and other liquids and foods), from the moment of birth through the first six months of life. It aims for all countries in West and Central Africa to achieve the global exclusive breastfeeding target of 50 percent by 2025.

Stronger With Breastmilk Only echoes the call to action of the [Global Breastfeeding Collective](#), a partnership of more than 20 international organizations, with the goal of increasing investment and policy change to support breastfeeding worldwide. This goal requires advocacy at the global, national and sub-national levels in order to meet the global breastfeeding target.

Meeting the global exclusive breastfeeding target of 50 percent by 2025 could save

the lives of 520,000 children and generate billions of dollars in economic gains as a result of increased productivity and reduced costs of illness and health care.

Breastmilk is the only source of water and food infants need from the moment of birth and for the first six months of life. Therefore, investing resources in exclusive breastfeeding for the first six months of life is a smart, cost-effective investment with lifelong benefits for children, mothers, families, communities and nations. For more details, visit [www.breastmilkonly.com](http://www.breastmilkonly.com)

Visit this [online tool](#) for information on the Cost of Not Breastfeeding in West and Central Africa.



**STRONGER WITH  
BREASTMILK ONLY**

**no water until 6 months  
for a healthier baby**

Findings from the review inform recommendations for programme managers and policymakers alike. The following areas for immediate action emerged as particularly important.

**Counsel and support mothers while involving grandmothers, fathers, and other family members in interpersonal communications** to strengthen understanding of and support for exclusive breastfeeding within family systems. This review's findings confirmed the need for sharing correct information on exclusive breastfeeding and the well-established observation that 'breastfeeding is not a one-woman job'. In West and Central Africa, the most influential family members are grandmothers, who pass on their experience and coach younger generations, and fathers, who in some settings hold ultimate decision-making authority with respect to access to health care and foods, and changes in family practices.

Engaging grandmothers and fathers in interpersonal communication and dialogue can:

- Strengthen understanding of breastmilk composition (including water content), breastfeeding mechanisms, and benefits of exclusive breastfeeding.
- Highlight the added value of giving breastmilk only, and the immediate and long-term risks of giving babies water at birth and during the first six months of life.
- Ensure mothers and caregivers can respond appropriately to the baby's cues and behaviours, including when the baby is sick.

**Help family members find and implement solutions to overcome emotional and practical barriers to exclusive breastfeeding.** This includes providing encouragement, good nutrition, and practical help with household chores and care of older siblings, so the mother has the time to breastfeed. In addition, mothers, particularly those who work outside the home, need support to safely express, store, and feed breastmilk when they are away or unavailable.

**Work with traditional healers, traditional birth attendants, and religious leaders** to adapt existing practices and recommendations that impede early initiation and maintenance of exclusive breastfeeding. The review found that deep-rooted cultural beliefs and practices that drive supplemental feeding practices included: welcoming newborns with holy water, assessing breastmilk quality or rejection of colostrum, separation of mother and newborn immediately after delivery at the time of birth, and provision of traditional health care to strengthen, prevent and treat children throughout infancy and early childhood.

Engaging respected traditional and religious leaders in communities and their networks and professional associations can contribute to larger-scale change. As partners and promoters of exclusive breastfeeding, they can model positive practices while acknowledging long-standing traditions and deep-rooted cultural beliefs and values in their communities. For example:

- Religious leaders can place holy water on the newborn's forehead (or another area of the body) during the welcome ceremony, rather than feeding the baby water.
- Religious leaders can conduct sermons on the composition and safety of breastmilk, benefits of giving breastmilk only, and the risks of giving water in the first six months of life to challenge misconceptions and shift social norms in favor of exclusive breastfeeding.
- Traditional healers and birth attendants can provide advice and care to infants under six months of age consistent with exclusive breastfeeding recommendations.

**Consult and involve communities** in devising effective ways to raise awareness, build commitment, and shift community norms to give breastmilk only, on demand (day and night)—no water, other liquids, or foods from the moment of birth and for the first six months of life.



Communities are essential levers for shifting family practices and social norms. It is recommended to work with community leaders, community health workers and volunteers, women's associations, other community-based organizations and non-government organizations to:

- Draw attention to the benefits of and strategies for giving breastmilk only, by showcasing the experiences of mothers and families who have adopted this change.
- Foster community dialogue around positive practices for early childhood feeding, stimulation and care.
- Advocate for community-level actions to improve maternal, newborn, infant and child health and nutrition services and care, such as improvements in communication with health care workers, access and availability of services, and childcare.

**Strengthen health workers' knowledge, skills, and motivation** to counsel and support initiation and maintenance of exclusive breastfeeding. The regional review confirmed how critical counselling and support are for the adoption of recommended breastfeeding practices. However, it also underlined some limitations and challenges health care workers face in promoting exclusive breastfeeding, leading them to adapt the recommendations they make regarding breastfeeding or conceal their true practices.

Nutrition and health programmes can strengthen and support facility- and community-based health workers' competencies and performance to promote positive changes in infant feeding practices, social norms and overcome other obstacles by:

- Introducing and monitoring adherence to national standards for breastfeeding counseling and support within the reproductive, maternal, newborn, infant, and child health continuum of care.
- Filling gaps in health care worker knowledge and skills by updating curriculum and instructional methods during pre-service and in-service training, as well as by providing periodic re-training and capacity strengthening in interpersonal communication.
- Listening to and consulting with health workers to address their needs and challenges and their role in problem-solving through supportive supervision.
- Providing support to health workers through on-the-job coaching, education, and, where possible, performance recognition and reward systems.

Nutrition and health programmes can engage health workers in their Stronger With Breastmilk Only initiative by acknowledging their challenges in supporting exclusive breastfeeding and giving them a more active role in devising solutions to persuade mothers and other family members to stop giving babies under six months of age water.





**Design evidence-informed communication campaigns that resonate with and inspire families and implement them through multiple channels** to shift social norms and promote family practices in favour of giving breastmilk only, no water (other liquids and foods) at birth and during the first six months of life.

The literature review described the pervasive practice of giving babies water and the social expectations underlying this practice, which appear particularly prominent and difficult to change in areas with hot and dry climates (or seasons). Shifting this practice in favour of giving babies under six months breastmilk only demands a society-wide and concerted approach that is also embedded within national health systems and implemented over time.

The Stronger With Breastmilk Only regional initiative calls for the implementation of multicomponent communication campaigns, where possible, to:

- Raise public awareness of and inspire families to adopt exclusive breastfeeding and its benefits through mass media and mobilization of journalists and other media professionals.
- Engage champions, role models, and other credible spokespeople (formal and informal) to share positive experiences and outcomes of exclusive breastfeeding, and address misconceptions regarding breastmilk and giving water to babies under six months old.
- Use social media to influence social perceptions and expectations, particularly among young people and young families with infants.

**Invest in pro-breastfeeding programmes and policies** to provide appropriate and long-lasting structure for the protection, promotion, and support for exclusive breastfeeding. The regional literature review underlined two aspects concerning this. First, the pervasive social trends that facilitate giving babies water starting as early as birth. Second, the need for policies to protect breastfeeding and provide breastfeeding support to working mothers.

Governments are called on to respond to and implement the Stronger With Breastmilk Only regional initiative's and Global Breastfeeding Collective's calls to action, which include:

- Embedding Stronger With Breastmilk Only approaches and messaging into infant and young child feeding (IYCF)-specific and -related programmes to improve support for exclusive breastfeeding. Examples of programmes related to IYCF are reproductive, maternal, neonatal, and child health (RMNCH), sick child and well-child services (includes immunization), water and sanitation, and social protection.
- Implementing the revised Ten Steps to Successful Breastfeeding and evidence-driven provider behaviour change activities to enhance health care workers' ability to correct common misconceptions and persuade mothers and family members to give breastmilk only.
- Implementing strong and well-enforced national legislation to reduce the unethical marketing of breastmilk substitutes, bottles, and teats as well as bottled water marketed for infants.
- Advocating for family-friendly policies and breastfeeding support for mothers who work, study, or must be separated from their babies for short periods, particularly during the baby's first six months, to help the mother exclusively breastfeed. Family-friendly policies,<sup>7</sup> include maternity protections such as paid maternity leave for at least 14 weeks, paid breaks to either breastfeed or express breastmilk, and access to safe, private, and hygienic spaces for expressing breastmilk at work (UNICEF, 2019c).

<sup>7</sup> Family-friendly policies are defined as "policies that help to balance and benefit both work and family life that typically provide three types of essential resources needed by parents and caregiver of young children: time, finances, and services" (UNICEF, 2019a).

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# Annex A:

## Search terms for literature review

Category	English	French
<b>Geographic location</b>	(West Africa) or (Central Africa) or (SubSaharan Africa) or (Benin) or (Guinea Bissau) or (Burkina Faso) or (Cameroon) or (Cabo Verde) or (Central Africa Republic) or (Chad) or (Congo) or (Democratic Republic of Congo) or (Equatorial Guinea) or (Gabon) or (Gambia) or (Ghana) Or (Guinea) or (Ivory Coast) or (Liberia) Or (Mali) or (Mauritania) or (Niger) or (Nigeria) or (Sao Tome and Principe) or (Sierra Leone) or (Senegal) or (Togo)	( Afrique de l'Ouest ) ou ( Afrique Centrale ) ou ( Afrique Subsaharienne ) ou ( Bénin ) ou ( Guinée Bissau ) ou ( Burkina Faso ) ou ( Cameroun ) ou ( Cap Vert ) ou ( Centrafrique ) ou ( Tchad ) ou ( Congo ) ou ( République Démocratique du Congo ) ou ( Guinée Equatoriale ) ou ( Gabon ) ou ( Gambie ) ou ( Ghana ) ou ( Guinée ) ou ( Côte d'Ivoire ) ou ( Libéria ) ou ( Mali ) ou ( Mauritanie ) ou ( Niger ) ou ( Nigéria ) ou ( Sao Tomé ) ou ( Sierra Leone ) ou ( Sénégal ) ou ( Togo )
<b>Study population</b>	(mother) or (caregiver) or (grand-mother) or (father) or (relative) or (health care provider) or (worker) or (professional) or (volunteer) or (agent) or (doctor) or (physician) or (midwife) or (traditional birth at-tendant) or (traditional healer) or (nurse) or (nutritionist) or (commu-nity) or (spouse)	( mère ) ou ( aide-soignant ) ou ( grand-mère ) ou ( époux ) ou ( père ) ou ( parent ) ou ( prestataire de santé ) ou ( travailleur ) ou ( professionnel ) ou ( agent de santé communautaire ) ou ( bénévole ) ou ( agent ) ou ( médecin ) ou ( sage-femme ) ou ( accoucheuse ) ou ( sage-femme traditionnelle ) ou ( guérisseur ) ou ( infirmière ) ou ( nutritionniste )
<b>Behaviors</b>	(breastfeeding) and (exclusive) or (giving water) or (giving tea) or (giving liquid) or (giving milk) or (giving breastmilk substitute)	( allaitement maternel exclusif ) et ( introduction/donner de l'eau ) ou ( donner de la tisane ) ou ( donner des liquides ) ou ( introduction de produits laitiers ) ou ( substituts au lait maternel )
<b>Associated factors</b>	(social) or (determinant) or (factor) or (influence) or (attitude) or (barri-er) or (belief) or (intention) or (pre-dictor) or (position) or (opinion) or (experience) or (knowledge) or (per-ception) or (motivation) or (ac-ceptance) or (attitude) or (practice) or (behavior) or (uptake) or (refusal) or (resistance) or (coverage) or (decision) or (willingness)	( social ) ou ( déterminant ) ou ( facteurs ) ou ( influences ) ou ( attitudes ) ou ( barrières ) ou ( croyance ), ( intention ) ou ( indicateur ) ou ( position ) ou ( opinion ) ou ( expérience ) ou ( connaissance ) ou ( perceptions ) ou ( motivation ) ou ( attitude ) ou ( acceptation ) ou ( adoption ) ou ( comportement ), ( pratiques ) ou ( assimilation ) ou ( refus ) ou ( résistance ) ou ( couverture ) ou ( décision ) ou ( volontés )

Each search will include a combination of the study population, the geographical location, the word “exclusive breastfeeding” and the words “feeding water” or “giving water”.



# Annex B:

## Master list of references

To complete this review, references were collected using the following search engines: Google Scholar, Pubmed, Popline and Cochrane Library and from selected websites for the grey literature. Additional documents were provided by the UNICEF country offices and also by members of the Core Group Nutrition and Social and Behavioral Change Communication Working Groups.

All references included in the study are listed by geographical area and the study methodology used (Table 1).

**Table 1: List of final references used in the literature review, by main method type (quantitative, qualitative or mixed) and type of reference (peer-reviewed, report, thesis)**

	Study methodology									Totals
	Quantitative			Qualitative			Mixed			
	Peer reviewed	Report	Thesis	Peer reviewed	Report	Thesis	Peer reviewed	Report	Thesis	
Benin	1	0	0	0	1	0	0	0	0	2
Burkina	3	0	0	0	1	0	0	0	0	4
Cameroon	4	0	0	1	3	0	2	0	0	10
Cap Vert	0	0	0	0	0	0	0	0	0	0
Centrafrique	1	0	0	0	0	0	0	0	0	1
Chad	1	0	0	0	1	0	0	0	0	2
Congo	0	0	0	0	0	0	0	0	0	0
Cote d'Ivoire	4	0	0	0	0	0	0	0	0	4
DRC	4	1	0	2	1	0	0	1	0	9
Eq. Guinea	1	0	0	0	0	0	0	0	0	1
Gabon	0	0	0	0	0	0	0	0	0	0
Gambia	0	0	0	0	0	0	1	0	0	1
Ghana	19	1	7	8	0	2	4	1	3	45
Guinea	0	0	0	0	0	0	0	0	0	0
Guinee Bissau	1	0	0	1	0	0	0	0	0	2
Liberia	1	0	0	0	0	0	0	0	0	1
Mali	2	0	0	1	0	0	0	0	0	3
Mauritania	0	0	0	1	0	0	1	1	0	3
Niger	1	0	0	0	2	0	0	2	0	5
Nigeria	93	0	1	4	0	0	9	1	0	108
Sao Tome	0	0	0	0	0	0	0	0	0	0
Senegal	2	0	1	0	1	0	0	0	0	4
Sierra Leone	0	1	0	1	0	0	0	0	0	2
Togo	2	0	0	0	0	0	0	1	0	3
Regional	15									15
TOTAL BY REPORT TYPE	155	3	9	19	10	2	17	7	3	225
TOTAL BY METHOD	167			31			27			225

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# Annex C: Determinants of EBF and their influence with references from quantitative studies, West and Central Africa

	Category	Sub-category	Determinants/ beliefs	Direction of influence	Number of references	
Individual	Socio-demographic	Age	Higher maternal age	Mixed	17	<b>Ghana:</b> (Sika-Bright S, s. d.); (Diji et al. 2016); (Asare et al. 2018); (Marquis et al. 2016); (Boakye-Yiadom et al. 2016) <b>Nigeria:</b> (Balogun et al. 2016); (Lawoyin, Olawuyi, and Onadeko 2001); (Okolobiri and Peterside 2013); (Ogundele and Ogundele 2016); (Aniebue, Aniebue, et Adimora 2010); (Roberts, Agbeboaye, and Olatona 2016); (Gayawan, Adebayo, and Chitekwe 2014); (Qureshi et al. 2011); (Ngwu C.N. 2015); (Okwori et al. 2011); (Udochi and Eke 2011); (Ugboaja et al. 2013)
		Education mother	Mother's higher education level	Positive	33	<b>Ghana:</b> (Diji et al. 2016); (Asare et al. 2018); (Saaka, Takyi, and Maxwell 2012); (Aidam et al. 2005); (Mensah et al. 2017) <b>Nigeria:</b> (Qureshi et al. 2011); (Roberts, Agbeboaye, and Olatona 2016); (Gayawan, Adebayo, and Chitekwe 2014); (Okolobiri and Peterside 2013); (Ngwu C.N. 2015); (Ugboaja et al. 2013); (Ogundele and Ogundele 2016); (Iliyasu et al. 2005); (Uchendu, Ikefuna, and Emodi 2009); (Felix Akpojene Ogbo et al. 2018); (Oparocha, Ibadin, and Muogbo 2002); (Agho et al. 2011); (Olayemi et al. 2014); (Ogunlesi 2010); (Sholeye, Abosede, and Salako 2015); (Onah et al. 2014); (Obilade 2015); (Alade et al. 2013); (Jacdonmi et al. 2016); (Pou 2018); (Odebode, Okesina, and Ola-Alani 2018); (Ogbonna and Daboer 2007) <b>Mali:</b> (Traoré et al. 2015); <b>Benin:</b> (Tossa et al. 2016); <b>DRC:</b> (Dhakal, Lee, and Nam 2017) <b>Cameroon:</b> (Fombong et al. 2016); <b>Senegal:</b> (Diagne-Guèye NR, et al. 2011); <b>Togo:</b> (Balaka et al. 2009)
		Education spouse/ partner	Father's education	Positive	5	<b>Nigeria:</b> (Roberts, Agbeboaye, and Olatona 2016); (Pou 2018); (Gayawan, Adebayo, and Chitekwe 2014) (Aniebue, Aniebue, and Adimora 2010); (Felix A. Ogbo, Agho, and Page 2015)
		Marital status	Mother married	Positive	10	<b>DRC:</b> (Dhakal, Lee, and Nam 2017); <b>Côte d'Ivoire:</b> (Coulibaly et al. 2014); <b>Ghana:</b> (Ayawine and Ae-Ngibise 2015); (Tampah-Naah and Kumi-Kyereme 2013) <b>Nigeria:</b> (Alade et al. 2013); (Jacdonmi et al. 2016); (Fehintola et al. 2016); (Agu and Agu 2011); (Udoudou, IO, and Ajayi, P.H. 2015); (Aniebue, Aniebue, and Adimora 2010)
		Size of family/parity	Varies	Mixed	9	<b>Cameroon:</b> (Nlend A, Wamba G, and Same Ekobo C 1997) <b>Nigeria:</b> (Qureshi et al. 2011); (Ogundele and Ogundele 2016); (Udoudou, IO, and Ajayi, P.H. 2015); (Uchendu, Ikefuna, and Emodi 2009); (Obilade 2015); (Aghaji 2002) <b>Ghana:</b> (Mensah et al. 2017); (Marquis et al. 2016)
		Ethnicity	Varies	Mixed	8	<b>Burkina Faso:</b> (Cresswell et al. 2017); <b>Cameroon:</b> (Fombong et al. 2016); <b>Liberia:</b> (Jarosz 1993); <b>Togo:</b> (Unicef 2015); <b>Nigeria:</b> (Fehintola et al. 2016); (Jacdonmi et al. 2016); <b>Benin:</b> (Tossa et al. 2016) <b>Ghana:</b> (Asare et al. 2018)

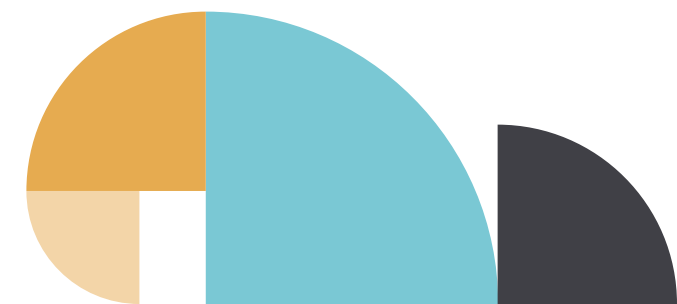
Category	Sub-category	Determinants/beliefs	Direction of influence	Number of references	
Socio-demographic	Religion	Varies	Mixed	10	<b>Nigeria:</b> (Ojofeitimi et al. 1999); (H. Sani 2014); (Fehintola et al. 2016); (Jacdonmi et al. 2016) ;(Obilade 2015) <b>Cameroon:</b> (Fombong et al. 2016) <b>Niger:</b> (Kone Mariatou 2008); <b>DRC:</b> (Damien Nahimana et al. 2014) <b>Ghana:</b> (Mensah et al. 2017); <b>Togo:</b> (Unicef 2015)
	Household wealth	Varies	Mixed	5	<b>Nigeria:</b> (Agho et al. 2011); (Roberts, Agbeboaye, and Olatona 2016); (Felix Akpojene Ogbo et al. 2018) <b>Ghana:</b> (Boakye-Yiadom et al. 2016)
	Geographic location	Varies	Mixed	8	<b>Cameroon:</b> (Fombong et al. 2016); <b>Ghana:</b> (Abdul-Razak Abizari, and Adjei E. 2015); (Tampah-Naah and Kumi-Kyereme 2013); <b>Nigeria:</b> (Agho et al. 2011); (Magaji et Ezenkiri 2017); (Ogunlesi 2010); <b>Côte d'Ivoire:</b> (Coulibaly et al. 2014); <b>DRC:</b> (Lubala et al. 2016)
Maternal knowledge	Knowledge of EBF	Incomplete understanding of the nature and duration of EBF	Negative	4	<b>Burkina:</b> (Cresswell et al. 2017); <b>Ghana:</b> (Nukpezah, Nuvor, and Ninnoni 2018) <b>Côte d'Ivoire:</b> (Yeo et al. 2005); <b>Nigeria:</b> (Agunbiade et Ogunleye 2012)
Maternal intention	Intention	Intention and motivation to breastfeed	Positive	9	<b>Senegal:</b> (« First Congress of the French Nutrition Society (Clermont-Ferrand, France, 17-19th November 2003). » 2003); <b>Mauritania:</b> (Nancy Keith, and Cheikh Mohamed El Hafed Ould Dehah 2009); <b>Nigeria:</b> (Agunbiade and Ogunleye 2012); (Balogun et al. 2016); (Saidu M, Gana S et al. 2014); (Saaka, Takyi, and Maxwell 2012); (Nwankwo and Brieger 2002); (Ugboaja et al. 2013); <b>Ghana:</b> (Aidam et al. 2005)
Maternal perceptions	Perceived benefits	Benefits of breastfeeding and/or EBF	Positive	19	<b>Côte d'Ivoire:</b> (Yeo et al. 2005); <b>DRC:</b> (Damien Nahimana et al. 2014); (Dhakal, Lee, and Nam 2017); (USAID 2017); <b>Niger:</b> (Kone Mariatou 2008); (Nancy Keith, 2007); <b>Sierra Leone:</b> (« Developing a Behavior Change Strategy in Sierra Leone (Nov 2010) » 2010) <b>Ghana:</b> (Nukpezah, Nuvor, and Ninnoni 2018); (Sika-Bright S, s. d.); (Asare et al. 2018) <b>Nigeria:</b> (H. Sani 2014); (Ella, Ndep, and Akpan 2016); (Qureshi et al. 2011); (Okolobiri and Peterside 2013); (Nwankwo and Brieger 2002); (Uchendu, Ikefuna, and Emodi 2009); (Odu et al. 2016); (Ngozi OV 2014) <b>Cameroon:</b> (Kakute et al. 2005)
	Perceived barriers	Mother has insufficient quantity of breastmilk	Negative	13	<b>Nigeria:</b> (Nwankwo and Brieger 2002); (Balogun et al. 2016);(Olatona et Odeyemi 2011);(Oche, Umar, and Ahmed 2011); (Alade et al. 2013);(Nnorom, R.M., and Felix,C.P., s. d.); (Ohaeri and Bello 2016); (Ella, Ndep, and Akpan 2016); <b>Cameroon:</b> (Kakute et al. 2005); <b>Ghana:</b> (Mogre, Dery, and Gaa 2016); (Abdul-Razak Abizari, and Adjei E. 2015); <b>Sierra Leone:</b> (« Developing a Behavior Change Strategy in Sierra Leone (Nov 2010) » 2010); <b>Togo:</b> (Balaka et al. 2009)
		EBF is time-consuming, demanding	Negative	6	<b>Nigeria:</b> (Okolobiri et Peterside 2013); (Aniebue, Aniebue, and Adimora 2010); (Ohaeri and Bello 2016); (Appiah JY and Chigozie NU. 2014);(Ukegbu et al. 2011) <b>Ghana:</b> (Mogre, Dery, et Gaa 2016)
		Breastfeeding affects mother's figure	Negative	3	<b>Nigeria:</b> (Sholeye, Abosede, and Salako 2015); (Udoudou, IO, and Ajayi, P.H. 2015) <b>Ghana:</b> (Ella, Ndep, and Akpan 2016)
		Uncomfortable breastfeeding in public	Negative	1	<b>Ghana:</b> (Appiah JY and Chigozie NU. 2014)
		EBF deteriorates maternal nutritional status	Negative	1	<b>Nigeria:</b> (Alade et al. 2013)



	Category	Sub-category	Determinants/ beliefs	Direction of influence	Number of references	
Individual	Maternal perceptions (continued)	Perceived barriers	EBF deteriorates maternal nutritional status	Negative	1	<b>Nigeria:</b> (Alade et al. 2013)
		Perceived outcomes for children	EBF results in child becoming malnourished	Negative	2	<b>Nigeria:</b> (Ella, Ndep, and Akpan 2016) <b>Ghana:</b> (Appiah JY and Chigozie NU. 2014)
			EBF will make it more difficult to wean the baby	Negative	1	<b>Ghana:</b> (Appiah JY and Chigozie NU. 2014)
	Maternal health		Psychological stress and anxiety	Negative	2	<b>Nigeria:</b> (Ella, Ndep, and Akpan 2016); (Nnorom, R.M., and Felix,C.P., s. d.)
			Breast pain	Negative	1	<b>Nigeria:</b> (Ella, Ndep, and Akpan 2016)
			Illness	Negative	8	<b>Ghana:</b> (Mensah et al. 2017);(Marquis et al. 2016); (Sekyi and Anyobodeh 2016) <b>Nigeria:</b> (Oche, Umar, and Ahmed 2011); (Pou 2018); (Nnorom, R.M., and Felix,C.P., s. d.); <b>Cameroon:</b> (Kakute et al. 2005); <b>DRC:</b> (Damien Nahimana et al. 2014)
	Infant attributes	Infant's age (0-5 months)	Older age (<=5 months)	Negative	9	<b>Burkina Faso:</b> (Cresswell et al. 2017); <b>Cameroon:</b> (Fombong et al. 2016) <b>Ghana:</b> (Sika-Bright S, s. d.); (Diji et al. 2016); <b>Côte d'Ivoire:</b> (Coulibaly et al. 2014) <b>Nigeria:</b> (Jacdonmi et al. 2016); (Gayawan, Adebayo, and Chitekwe 2014); (Onah et al. 2014); (Oparoacha, Ibadin, and Muogbo 2002)
		Infant's sex	Male	Negative	2	<b>Nigeria:</b> (Agunbiade and Ogunleye 2012); (Agho et al. 2011)
		Infant characteristics	Premature, twin/ triplet, etc.	Negative	1	<b>Nigeria:</b> (Nnorom, R.M., and Felix,C.P., s. d.)
			Short birth interval (e.g., <2 years)	Negative	2	<b>Nigeria:</b> (Fehintola et al. 2016); (Aghaji 2002)
			Low weight gain of infant	Negative	6	<b>Ghana:</b> (Marquis et al. 2016) <b>Nigeria:</b> (Mbada et al. 2013); (Anselm S. Berde and Yalcin 2016); (Eregie 1998); (Anselm Shekwagu Berde et al. 2017); (Nwali et al. 2016)
			Illness in last two weeks	Negative	4	<b>Burkina Faso:</b> (Cresswell et al. 2017); <b>Nigeria:</b> (Nnorom, R.M., and Felix,C.P., s. d.); <b>DRC:</b> (Damien Nahimana et al. 2014); <b>Cameroon:</b> (Chiabi et al. 2011)

Sub-Level	Category	Sub-category	Determinants/ beliefs	Direction of influence	Number of references	
Family/ household	Family support	Family member	Husband	Mixed	6	<b>Nigeria:</b> (Fehintola et al. 2016); (Ugboaja et al. 2013); (Ohaeri and Bello 2016); (Okolobiri and Peterside 2013); (Tyndall, Kamai, and Chanchangi 2016); (Osibogun, Olufunlayo, and Oyibo 2018)
			Grandmother	Mixed	2	<b>Nigeria:</b> (Agunbiade and Ogunleye 2012); (Nwankwo and Brieger 2002)
		Community support	Support group	Mixed	1	<b>Ghana:</b> (Boakye-Yiadom et al. 2016)
	Health system	Health system support	Health care worker influence	Positive	2	<b>Nigeria:</b> (Jacdonmi et al. 2016); (Qureshi et al. 2011)
		Health service utilization	Antenatal care	Positive	15	<b>DRC:</b> (Damien Nahimana et al. 2014); <b>Nigeria:</b> (Fehintola et al. 2016); (Ugboaja et al. 2013); (Agho et al. 2011); (Akodu et al. 2014); (Felix Akpojene Ogbo et al. 2018); (Agu et al. 2011); (Bisi-Onyemaechi et al. 2017); (Olayemi et al. 2014); (Ogunlesi 2010); <b>Ghana:</b> (Laar and Govender 2011); (Saaka, Takyi, and Maxwell 2012); (Boakye-Yiadom et al. 2016); (Aidam et al. 2005); <b>Cameroon:</b> (Kakute et al. 2005)
			Postnatal care	Positive	5	<b>Ghana:</b> (Aidam et al. 2005); <b>Burkina Faso:</b> (Cresswell et al. 2017); <b>Cameroon:</b> (Fombong et al. 2016); <b>Nigeria:</b> (Ugboaja et al. 2013); (Agu et al. 2011)
		Home vs. facility birth and type of health facility	Birth in a health facility; Tertiary or secondary health facility	Positive	15	<b>Burkina Faso:</b> (Cresswell et al. 2017); <b>Niger:</b> (Nancy Keith, 2007); <b>Cameroon:</b> (Fombong et al. 2016); <b>Ghana:</b> (Aidam et al. 2005); (Saaka, Takyi, and Maxwell 2012); (Abdul-Razak Abizari, and Adjei E. 2015); (Tampah-Naah and Kumi-Kyereme 2013); <b>Côte d'Ivoire:</b> (Coulbaly et al. 2014); <b>Nigeria:</b> (Lawoyin, Olawuyi, and Onadeko 2001); (Agho et al. 2011); (Felix Akpojene Ogbo et al. 2018); (Gayawan, Adebayo, and Chitekwe 2014); (Ogunlesi 2010); (Pou 2018) <b>DRC:</b> (Dhakal, Lee, et Nam 2017)
	Delivery characteristics	Mode of delivery	Vaginal	Positive	5	<b>Côte d'Ivoire:</b> (Coulbaly et al. 2014); <b>Ghana:</b> (Dun-Dery and Laar 2016); <b>Nigeria:</b> (Felix Akpojene Ogbo et al. 2018); (Onah et al. 2014); (Fehintola et al. 2016)
			Caesarean	Negative	5	<b>Côte d'Ivoire:</b> (Coulbaly et al. 2014); <b>Ghana:</b> (Dun-Dery and Laar 2016); <b>Nigeria:</b> (Felix Akpojene Ogbo et al. 2018); (Onah et al. 2014); (Fehintola et al. 2016)

	Sub-Level	Category	Sub-category	Determinants/ beliefs	Direction of influence	Number of references	
Setting	Health system	Delivery characteristics	Type of provider	Skilled health professional	Positive	15	<b>Burkina Faso:</b> (Cresswell et al. 2017); <b>Niger:</b> (Nancy Keith, 2007); <b>Cameroon:</b> (Fombong et al. 2016); <b>Ghana:</b> (Aidam et al. 2005); (Saaka, Takyi, and Maxwell 2012); (Abdul-Razak Abizari, and Adjei E. 2015); (Tampah-Naah and Kumi-Kyereme 2013); <b>Côte d'Ivoire:</b> (Coulibaly et al. 2014); <b>Nigeria:</b> (Lawoyin, Olawuyi, and Onadeko 2001); (Agho et al. 2011); (Felix Akpojene Ogbo et al. 2018); (Gayawan, Adebayo, and Chitekwe 2014); (Ogunlesi 2010); (Pou 2018) <b>DRC:</b> (Dhakal, Lee, and Nam 2017)
			Infant characteristics at birth	Multiple births	Negative	2	<b>Nigeria:</b> (Okolobiri and Peterside 2013); <b>Cameroon:</b> (Kakute et al. 2005)
				Prematurity	Negative	1	<b>Nigeria:</b> (Nnorom, R.M., and Felix,C.P., s. d.)
		Post-delivery characteristics	Post-delivery care	Early initiation of breastfeeding	Positive	4	<b>Nigeria:</b> (Onah et al. 2014); (Balogun et al. 2016); (Jacdonmi and al. 2016); (Ogundele and Ogundele 2016)
	Workplace and employment	Work status	Work responsibilities	Working mothers: professional or farming	Negative	26	<b>Cameroon:</b> (Kakute et al. 2005); <b>Côte d'Ivoire:</b> (Coulibaly et al. 2014); <b>DRC:</b> (Damien Nahimana et al. 2014); <b>Togo:</b> (Balaka et al. 2009) <b>Ghana:</b> (Diji et al. 2016); (Saaka, Takyi, and Maxwell 2012); (Dun-Dery and Laar 2016); (Sika-Bright S, s. d.); (Nkrumah 2017); (Sekyi and Anyobodeh 2016); (Danso 2014) <b>Nigeria:</b> (Olayemi et al. 2014); (Ogunlesi 2010); (Lawoyin, Olawuyi, and Onadeko 2001); (Nnorom, R.M., and Felix,C.P., s. d.); (H. Sani 2014); (Ella, Ndep, and Akpan 2016); (Okolobiri and Peterside 2013); (Udoudou, IO, and Ajayi, P.H. 2015); (Ogunlesi 2010); (Ogundele and Ogundele 2016); (Pou 2018); (Aghaji 2002); (Alade et al. 2013); (Ohaeri and Bello 2016); (Odebode, Okesina, and Ola-Alani 2018); (Neji, Nkemdilim, and Ferdinand 2015)
Structural	-	Maternity protection	Maternity leave	Three or more months	Positive	2	<b>Ghana:</b> (Diji et al. 2016); (Dun-Dery and Laar 2016)
		Social norms (trends)	Climate	Heat / water is life	Negative	3	<b>Mauritania:</b> (Nancy Keith, and Cheikh Mohamed El Hafed Ould Dehah 2009); <b>Nigeria:</b> (Tyndall, Kamai, and Chanchangi 2016); (Ojofeitimi et al. 1999)



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