

# Mothers' Knowledge and Practices Regarding Exclusive Breastfeeding in the Central African Republic

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## Abstract

**Introduction:** Breastfeeding is the best way to provide ideal nutrition for optimal infant growth and development. **Objectives:** The aim of our work was to assess the knowledge, attitudes and practices of mothers of children aged 0 - 24 months on exclusive breastfeeding in the Central African Republic. **Methods:** This was a cross-sectional, descriptive and analytical study conducted from September 15 to October 15, 2024 among mothers of infants aged 0 to 24 months. Sociodemographic, obstetric and breastfeeding-related data were collected through individual interviews conducted during sensitizations on good feeding practices organized by the Tina Touadera Foundation. The chi<sup>2</sup> test was used to test for relationships between variables, and the p significance level was set at 0.05. **Results:** The average age of the mothers surveyed was 27.67 years. 65.69% (n = 247) of mothers lived in urban areas and 55.85% (n = 210) were Muslim. 56.38% (n = 212) were living common-law and 34.04% (n = 128) were poor. Secondary-school mothers (44.42%, n = 167) and housewives (53.72%, n = 202) were in the majority. Exclusive breastfeeding (EBF) was correctly defined by 79.26% (n = 298) of mothers and actually practised in 24.20% (n = 91) of cases. The main source of information was a health professional in 75.36% (n = 304) of cases. Among the 285 mothers who practised mixed breastfeeding, lack of time (33.33%) was the main reason. They acknowledged having given water (100%), corn porridge (75.09%) and/or artificial milk (24.91%) before the first 6 months of life. The average time for introducing water was 2.2 months, and for porridge/formula 2.79 months. More than half the mothers (55.05%) said they did not know their infants' weaning age. Factors positively influencing the use of EBF were age under 29, residence in an urban area, primiparity, having been informed about AME by a health professional, and being a housewife or

shopkeeper ( $p < 0.001$ ). **Conclusion:** Mothers' level of knowledge was heterogeneous but insufficient overall. An effective system of information and education from pregnancy to the first six months of life is needed to promote breastfeeding.

### Keywords

EBF, Knowledge, Attitudes, Practices, Mothers, CAR

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## 1. Introduction

Exclusive breastfeeding (EBF) is defined by the WHO as “the practice of giving an infant only breast milk for the first six months; no other liquids or solids except drops or syrups containing vitamins, minerals or drugs may be given” [1] [2]. While the health benefits for both mother and child are well established, we now know that the protective effect depends on the duration and exclusivity of breastfeeding. Children who are breastfed for at least 6 months benefit from these advantages [3]. The WHO recommends that it be continued for up to two years, with the addition of appropriate complementary foods. Among the various preventive interventions, EBF has the greatest impact on the health of mother and child [4]. The practice of EBF ensures the normal development and growth of the infant, and thus prevents all forms of malnutrition (from deficiency or excess) even in adulthood. While strengthening the mother-child bond and the child's immunity, it also reduces the cost of buying artificial milk and seeking medical care [5]. It also reduces infant morbidity and mortality due to common childhood illnesses [5]-[7]. It is estimated that 1.5 million deaths worldwide could be prevented by breastfeeding [8]. Despite the indisputable benefits of breast milk for both mother and child, the practice of exclusive breastfeeding remains problematic. Indeed, only 37% of children worldwide are exclusively breastfed up to the age of 6 months, 47% in low-income countries, 39% in middle-income countries and 37% in high-income countries [5]. From 1990 to 2004, in sub-Saharan Africa, EBF rose from 15% to 32%, and in West and Central Africa from 4% to 22% [9]. Despite this upward trend, EBF remains low and represents a public health priority in many countries around the world, and in the Central African Republic in particular. In 2012, the WHO set a global nutrition goal of increasing the 6-month EBF rate to at least 50% by 2025 [1]. In this context, Sepou's work, which reported an EBF frequency of 17% in 2001, has remained the benchmark for 23 years [10]. It therefore seemed necessary to take stock of the prevalence of EBF in order to have up-to-date data that could contribute to the development of strategies aimed at achieving the goals set in 2012 by the WHO of increasing EBF by 50% in all countries by 2025. The aim of this study was to assess the frequency, knowledge, attitudes and practices of mothers living in rural and urban areas of the Central African Republic—with regard to exclusive breastfeeding—while identifying related factors.

## 2. Setting, Materials and Methods

### 2.1. Study Areas

Our survey was carried out in two zones:

- ❖ **Urban zone:** Bangui, capital of the Central African Republic, located in the south-west of the country and bathed by the Oubangui River. It lies between 4°20'50" and 4°25'21" north latitude and 18°31'41" to 18°38'00" east longitude. Covering an area of 94 km<sup>2</sup> in 2010, it is expected to have a population of 1,500,000 by 2023, more than half the country's urban population.
- ❖ **Rural zone:** Damara in Ombella-Mpoko.

### 2.2. Type and Period of Study

This is a cross-sectional, descriptive and analytical study, conducted between September 15 and October 15, 2024, in rural and urban areas of the Central African Republic.

### 2.3. Study Population

The target population of our survey was mothers of children aged 0 to 24 months (with recent breastfeeding experience), residing in the Central African Republic for more than 6 months, met during awareness-raising sessions on good feeding practices organized by the Tina Touadera Foundation.

### 2.4. Inclusion Criteria

All mothers of children aged between 0 and 24 months at the time of the survey who agreed to participate.

### 2.5. Non-Inclusion Criteria

- ✓ Refusal to participate in the survey.
- ✓ Women with no children and women with children over 24 months of age.

A total of 376 eligible women were recruited and interviewed during the awareness-raising days.

### 2.6. Data Collection

Data collection was carried out after a face-to-face interview by trained interviewers with consenting women, using a questionnaire previously tested by our team.

### 2.7. Bias and Ethical Considerations

The data came mainly from interviews on the temporal course of an infant's feeding. As a result, memory bias was a possibility. Data collection in the field began only after approval had been obtained from the Central African Republic's health and administrative authorities. It was carried out with strict respect for cultural values and anonymity.

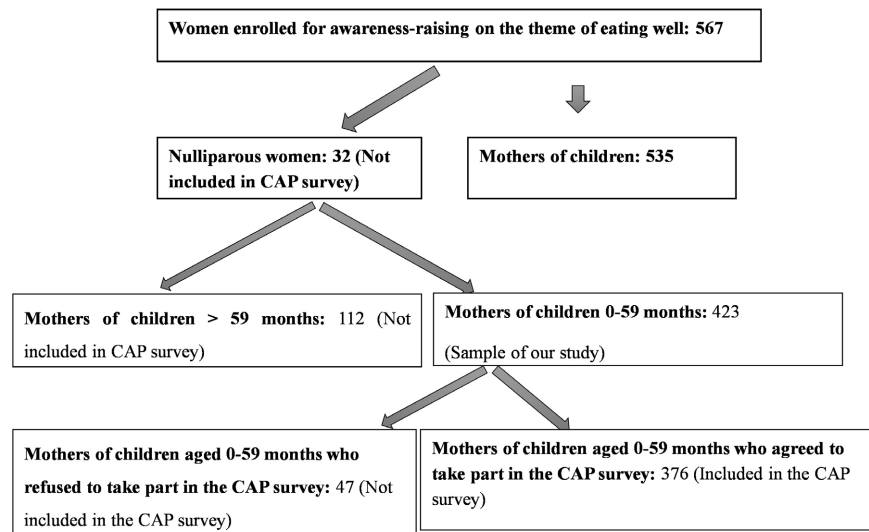
## 2.8. Data Processing and Analysis

Data were analyzed using Epi Info 7.2.6 software. The chi-square statistical test was used with a threshold of 5% to test for a significant relationship between the practice of AME and the variables influencing it.

## 3. Results

### 3.1. Descriptive Results

#### 3.1.1. Flow of Survey Mothers (Graph 1)

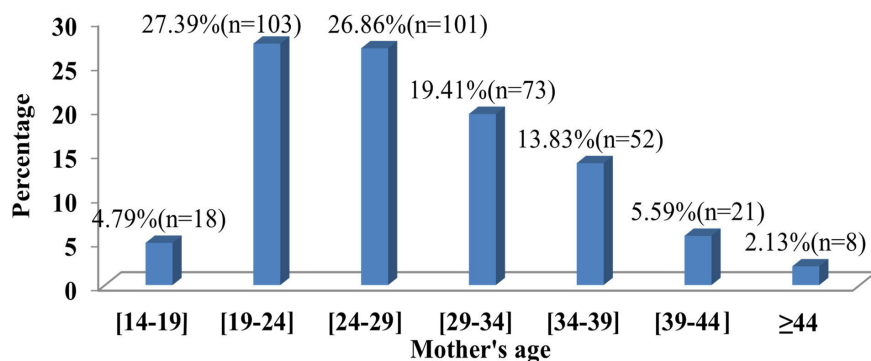


**Graph 1.** Flow of surveyed mothers.

#### 3.1.2. Socio-Demographic Characteristics of Respondents

##### 1) Age

The average age of mothers was 27.67 years, with extremes of 14 and 47 years. The age distribution of mothers reveals that 59.04% (n = 222) were under 29. This distribution is shown in **Figure 1**.



**Figure 1.** Distribution of mothers by age.

##### 2) Place of residence

Mothers lived in urban areas in 65.69% (n = 247) of cases, and in rural areas in

34.31% (n = 129).

### 3) Religion

Over half the mothers were Muslim 55.85% (n = 210) versus 44.15% (n = 166) Christian.

### 4) Marital status

The mothers were living common-law in 56.38% (n = 212) of cases. They were single in 42.55% (n = 160), married in 0.53% (n = 2) and widowed in 0.53% (n = 2).

### 5) Education level

The mothers had secondary education in 44.42% (n = 167) of cases, primary education in 35.37% (n = 133) and university education in 2.66% (n = 10). They had no schooling in 17.55% (n = 66) of cases.

### 6) Mothers' professions

Mothers were housewives in 53.72% (n = 202) of cases. The breakdown of mothers by occupation is shown in **Table 1**:

**Table 1.** Distribution of mothers by profession.

Mothers' professions (N = 376)	Workforce	Percentage (%)
Housewives	202	53.72
Shopkeepers	76	20.21
Private sector employees	54	14.36
Farmers	25	6.64
Other	11	2.93
Students	6	1.61
Civil servants	2	0.53

### 7) Parity of mothers

Mothers were primiparous in 20.21% (n = 76) of cases, pauciparous in 34.04% (n = 128), multiparous in 27.92% (n = 105) and grand multiparous in 17.83% (n = 67) of cases.

#### 3.1.3. Type of Breastfeeding during the Infant's First Six Months of Life

Of the mothers surveyed, 91 exclusively breastfed their infants for the first six months of life, a rate of 24.20%. The remaining 75.80% (n = 285) practised mixed breastfeeding (MBF).

#### 3.1.4. Women's Attitudes and Practices Regarding Exclusive Breastfeeding

##### 1) Good definition of exclusive breastfeeding

EBF was correctly defined by 79.26% (n = 298) of mothers versus 20.74% (n = 78) who gave the wrong definition.

##### 2) Average daily feeding frequency (N = 285)

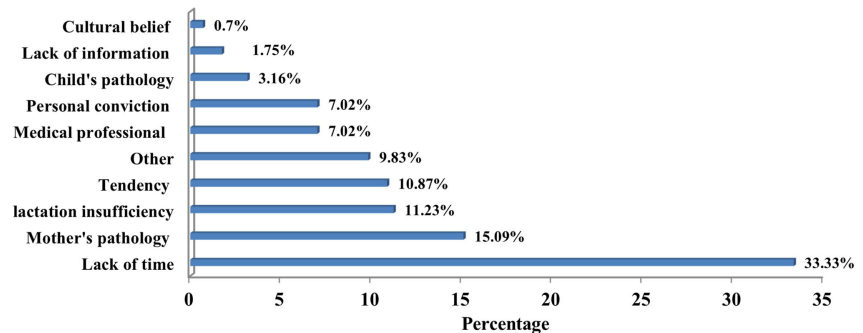
Mothers surveyed reported breastfeeding their infants on demand in 39.10% (n = 147) of cases, less than ten times a day in 12.5% (n = 47) of cases and more than

10 times in 10.10% (n = 38) of cases. Those who said they didn't know the frequency of feeds accounted for 38.30% (n = 144).

### 3) Information on exclusive breastfeeding after childbirth (N = 376)

Mothers informed about the EBF represented 75.26% (n = 283) versus 24.73% (n = 93) who were not.

#### 3.1.5. Reasons for Early Introduction of Food Supplements (N = 285)



#### 3.1.6. Main Dietary Supplements to Breast Milk (N = 285)\*

All (100%) of the mothers surveyed cited water as the first food to be given to the child in addition to breast milk, followed by corn porridge 75.09% (n = 214) and artificial milk 21 (24.91%).

\*The same infant could receive one or more supplements to breast milk.

#### 3.1.7. Time of Introduction of Dietary Supplements (N = 285)

The average time taken to introduce water was 2.2 months, with extremes ranging from birth to 5.2 months. Corn porridge and artificial milk were introduced after an average delay of 2.79 months, with extremes ranging from 1 day to 5.4 months. The distribution of mothers according to the time taken to introduce food supplements is shown in [Table 2](#).

**Table 2.** Distribution of mothers according to the time taken to introduce food supplements.

Time in months (N = 285)	Workforce	Percentage (%)
<b>Delayed introduction of water</b>		
<1	98	34.38
[1 - 2]	48	16.85
[2 - 3]	2	0.7
[3 - 4]	132	46.32
[4 - 5]	5	1.75
<b>Spray mixture introduction time</b>		
<1	8	2.81
[1 - 2]	34	11.93
[2 - 3]	108	37.89
[3 - 4]	133	46.67
[4 - 5]	2	0.7

### 3.1.8. Probable Average Age at Weaning (N = 376)

In the survey carried out: 55.05% (n = 207) of mothers interviewed said they didn't know the age at which they stopped breastfeeding; 3.45% (n = 13) said they stopped breastfeeding between 6 and 12 months; 22.08% (n = 83) between 12 and 18 months; 12.5% (n = 47) between 18 and 24 months; and 6.92% (n = 26) between 24 and 30 months.

### 3.2. Analytical Data

The positive factors associated with the use of the EBF were age under 29, residence in an urban area, primiparity, having been informed about the EBF by a health professional, and household and commercial occupation (Table 3).

**Table 3.** Analytical data.

Factors (N = 376)	Choosing the type of breastfeeding		P	OR	X <sup>2</sup>
	EBF* (n = 91)	MBF** (n = 285)			
<b>Maternal age (in years)</b>					
<29 (n = 222)	65	157	0.002	2.03 [1.22 - 3.39]	7.61
≥29 (n = 154)	26	128			
<b>Place of residence</b>					
Urban (n = 247)	86	161	<0.001	13.24 [5.21 - 33.62]	44.22
Rural (n = 129)	5	124			
<b>Religion</b>					
Musulmane (n = 210)	48	162	0.24	0.84 [0.52 - 1.36]	0.46
Chrétienne (n = 166)	43	123			
<b>Parity</b>					
Primipare (n = 76)	57	19	<0.001	23.47 [12.49 - 44.07]	133.98
Multipare (n = 300)	34	266			
<b>Marital status</b>					
Living with a partner (n = 214)	58	156	0.06	1.45 [0.89 - 2.36]	2.27
Living alone (n = 162)	33	129			
In school (n = 310)	73	237	0.25	0.82 [0.44 - 1.49]	0.41
Not in school (n = 66)	18	48			
<b>Profession</b>					
Housewives (n = 202)	66	136	<0.001	11.8 [3.58 - 38.87]	24.42
Tradeswoman (n = 76)	3	73			
Employed in private sector (n = 54)	4	50	<0.001	6.06 [2.10 - 17.50]	13.69
Women farmers (n = 25)	14	11	0.013	0.38 [0.16 - 0.88]	5.30
Other (n = 11)	2	9	0.17	2.18 [0.45 - 10.39]	1
Student (n = 6)	1	5	0.23	2.42 [0.27 - 21.19]	0.68
Civil servant (n = 2)	1	1	0.32	0.48 [0.02 - 7.88]	0.26

## Continued

Information on EBF from a healthcare professional					
Yes (n = 304)	81	223	0.015	2.14 [1.04 - 4.38]	4.50
No (n = 69)	10	59			

## 4. Discussion

### 4.1. Difficulties and Limitations of the Study

The aim of this survey was to analyze mothers' knowledge, attitudes and practices concerning exclusive breastfeeding, as well as the factors influencing its choice. Three hundred and seventy-six breastfeeding mothers were included during the study period. **One of the main limitations of this study lies in the method of data collection, mainly based on interviews with mothers;** bearing in mind that interviews carry a risk of memory bias, particularly when retrospective information is sought. To minimize this bias, the study focused solely on mothers of children aged 0 - 24 months. This reduces the risk of major oversights. In addition, the interviewers were trained to interact patiently with the mothers, helping them to remember any foods or liquids given other than breast milk. Despite the challenges inherent in interviewing, **the study benefited from a rigorous methodology and a representative sample,** thanks to selection in two sites (urban and rural), offering coverage of the Central African population. This geographically diverse approach is essential to ensure that the results are representative of practices and attitudes in different areas. In addition, **the sample size enhanced the robustness of the statistical analysis,** making the study's conclusions more reliable. As a result, the results obtained could provide a valuable baseline for health authorities, with a view to adjusting their strategies aimed at achieving a 50% exclusive breastfeeding rate among infants under six months of age by 2025; in line with the World Health Organization's targets [1].

### 4.2. Socio-Demographic Characteristics of the Mothers Surveyed

#### 4.2.1. Age of Mothers

The average age of the mothers, around 27.67 years, reflects the typical age of women of childbearing age as found in similar studies; notably by Mulugeta *et al.* in Ethiopia with 27.65 years [11], Laamiri *et al.* in Morocco (27.36 years) [12] and Gueye *et al.* in Senegal (27 years) [13]. Elsewhere, the average age of breastfeeding mothers is low. This is observed by Traoré *et al.* in Mali (26.86 years) in 2014 [9], Mohapatra *et al.* in India (23.73 years) in 2018 [14], Kouassi in Côte d'Ivoire (24 years) in 2018 [15], Sacko *et al.* in Mali (25 years) in 2019 [16], Chandambuka *et al.* in Zimbabwe (26 years) in 2019 [17] and Rabevazaha *et al.* in Antananarivo (26 years) in 2019 [18]. In series with a higher mean age than ours, we observe a mean age of around 28 years in Togo by Takassi *et al.* [19], 28.5 years in India by Ambuj *et al.* [20], 29.55 years in Portugal by Cardoso *et al.* [21], 29.8 years in Algeria by Mecheri [22] and 33 years in Nigeria by Atimati *et al.* [23]. This review shows that the period covering the second and third decades of a woman's life is a constant

for breastfeeding, and that both cultural and economic influences may affect compliance with recommendations for good practice from one country to another.

#### 4.2.2. Mothers' Occupations

In our series, the majority of mothers were housewives (53.72%). Most African studies have reached the same conclusion, with different proportions ranging respectively from 55.4% in Cameroon by Kamba *et al.* [24] to 54.8% in Mali by Sidibe *et al.* [25], 50.8% in Nigeria by Abdulmaleek *et al.* [26] and 45.1% in Ethiopia by Mulugeta *et al.* [11]. On the European continent, the study by Cascone *et al.* in Italy in 2019 came to the same conclusion, with 53.6% of housewives [27]. An Asian study by Gurung *et al.* in Nepal in 2018 noted that almost all breastfeeding mothers were housewives (92.1%) [28]. In the Middle East in Saudi Arabia, Sohair *et al.* noted no breastfeeding mothers who were housewives. Most breastfeeding mothers (56.9%) in Saudi Arabia are public-sector employees [29]. Similarly, very low proportions of housewives were found in studies in Côte d'Ivoire by Coulibaly *et al.* (12.23%) [30], in Nigeria by Igwe *et al.* (15.0%) [31], and in Togo by Adedemy *et al.* (30.6%) [32]. From these observations, it is worth noting the high proportion of breastfeeding housewives in regions with low household incomes, underpinned by their level of education; without neglecting the weight of cultural and politico-religious factors in the conduct of infant feeding. Indeed, more than half the women surveyed in the Central African Republic have a low level of education (44.42% have secondary education and 35.37% primary education), to which must be added the illiteracy rate of 17.55%. This low level of education offers few opportunities for employment, which is virtually non-existent in rural areas, where just over a third (34.31%) of our survey population live. What's more, the rural environment of the Central African Republic is reputed to be teeming with women who, due to a lack of suitable vocational training, are less able to work and therefore less competitive on the job market. In addition, the lack of arable land close to home means that women with little chance of finding paid employment opt for domestic chores.

#### 4.2.3. Mothers' Parity

In this context, we distinguish:

- ✓ Studies that have reported a significant proportion of pauci-pares corroborating our statistic of the order of 27.92% of cases. These are the studies by Afrose *et al.* in Bangladesh in 2012 [33] and Nukpezah *et al.* in Ghana in 2018 [34].
- ✓ Those noting the majority of primiparous breastfeeding mothers in India by Sarmilla *et al.* in 2013 [35] and by Pal *et al.* in 2014 [36] and in France by Laure in 2014 [37].
- ✓ Finally, some studies report a predominance of multiparous mothers, notably in Iran by Khoushabi *et al.* in 2018 [38], in Kenya by Mohat *et al.* in 2018 [39] and in Italy by Cascone *et al.* in 2019 [21].

#### 4.2.4. Frequency of Exclusive Breastfeeding

WHO and UNICEF advise exclusive breastfeeding for up to six months, while

recognizing that some mothers will not be able to follow this recommendation, or will decide not to do so [40]. For example, WHO and UNICEF promote breastfeeding by disseminating the “10 conditions for successful breastfeeding”, as part of the Baby-Friendly Hospital Initiative [41]. Furthermore, the crucial role of breastfeeding is at the heart of the global strategy for infant and young child feeding [41] [42]. Indeed, worldwide figures for the rate of exclusive breastfeeding at six months are still very low compared with the duration recommended by the WHO [41]; witness the EBF rate in our series (24.20%), representing barely half the WHO target for 2025. These results are corroborated by data from most countries, in varying proportions. We note that some authors have noted results higher than ours, but still below WHO recommendations: 39.6% for Aké-Tano *et al.* [43]; 37% for Arts *et al.* [44]; 36.5% for Diarra *et al.* [45]; 32% for Demmouche *et al.* [46]; 31% for Gelbert *et al.* [47]; 30.67% for Toni *et al.* [48]; 30.66% for Traoré *et al.* [9]; 30.67% for Lubala *et al.* [48]; 29% for Mascarenhas *et al.* [49] and 28% by Mecheri-Touati *et al.* [22]. Meanwhile, according to UNICEF, the percentage of infants under six months exclusively breastfed between 2010 and 2015 is estimated at 39% worldwide [50] [51].

EBF was even less common in other countries, with lower frequencies than ours, recorded in Tunisia (1.9%) [52], France (9%) [53], Egypt (9.7%) [54], Mali (10%) [25], Brazil (11%) [49], Saudi Arabia (12.2%) [55] and Côte d’Ivoire (16.67%) [29]. Few studies, such as Senegal (51.8%) [13], have EBF rates in the first six months higher than the 50% target advocated by the WHO [8]. Our low EBF rate could be explained by ignorance, insufficient awareness of the benefits of breastfeeding, and socio-cultural and religious constraints. In our series, 24.73% of mothers said they had not been made aware of the benefits of breastfeeding. In addition, cultural beliefs, often under the influence of mothers-in-law, encourage mothers to make their infants ingest decoctions of medicinal plants to make them stronger and healthier, or to give them water because of the heat or incessant crying. Finally, the lack of widespread awareness of the importance of exclusive breastfeeding for up to six months could be another explanation for the low breastfeeding rate in our series.

#### 4.2.5. Factors Influencing Breastfeeding

##### 1) Correlation between mother’s age and exclusive breastfeeding

A good understanding of the factors associated with EBF will enable us to redirect breastfeeding promotion activities, in order to significantly improve the practice of exclusive breastfeeding for the well-being of children. In our survey, we found a significant association between the practice of EBF and the mother’s age. Mothers under 29 years of age were 2.03 times more likely to practice EBF than those over 29 ( $p = 0.002$  OR = 2.03 [1.22 - 3.39]). This result is similar to that of Sacko *et al.* in Mali, who also found a significant relationship between exclusive breastfeeding and maternal age ( $p = 0.0093$ ). Their study revealed that the 21 - 30 age group was more likely to practice exclusive breastfeeding [16]. Several authors have reached the same conclusion in their studies, notably Amin *et al.* [55] in Saudi Arabia, who noted that

mothers with an average age of 29.4 years practiced more exclusive breastfeeding than those over 29.4 years, with a statistically significant difference and an OR = 1.14 [1.03 - 1.23]. In their study Ghwass *et al.* [54] in Egypt, noted that mothers under 20 years of age breastfed more than others, with an OR = 2.9 [1.03 - 8.3]. A similar study by Sangho *et al.* showed that younger mothers (under 30) were more likely to breastfeed [56]. Finally, Gueye *et al.* also found a significant association between the practice of EBF and the young age of mothers, noting that mothers aged under 25 practiced EBF more than those over 25, with an OR of 2.03 [1.23 - 3.36] [13]. Elsewhere, in the series of studies that have observed older women adhering to the practice of EBF, we can cite that of Gonzalez *et al.* in Spain, showing that age over 35 is associated with starting and maintaining EBF [57]. In a similar vein, a meta-analysis showed that higher maternal age was associated with increased intention to breastfeed and later weaning [58]. These results could be explained on the one hand by the fact that the socio-demographic context in which a statistically significant association is noted between advanced maternal age and the tendency to exclusively breastfeed their babies is different from that of developing countries, due to the age pyramid and late childbearing. On the other hand, globalization, with the rise of the Internet increasingly accessible to all social strata, has led to the generation commonly referred to in our countries as *the “android generation”*. This new generation tends to do research to be more in tune with the new recommendations concerning their health and that of their children. This is evidenced by the fact that three quarters (75%) of the mothers in our survey said they had been informed about the importance of practising EBF, even though only 24.20% actually practise it. The older generation, on the other hand, is more tradition-oriented.

### **2) Correlation between mothers’ place of residence and exclusive breastfeeding**

In the literature, the frequency and duration of breastfeeding are closely linked to the mother’s place of residence [59]. In our survey, we found that the probability of a mother living in an urban area exclusively breastfeeding her baby for up to 6 months was 13.24 times greater than a mother living in a rural area, with a statistically significant difference ( $p < 0.001$  OR = 13.24 [5.21 - 33.62]). This is totally at odds with national surveys carried out in France in 2023 [59] and in Morocco in 2011 [60], which found that mothers living in rural areas practiced exclusive breastfeeding more than those in urban areas, with a statistically significant difference. This could be explained by the persistence of ancestral beliefs and socio-cultural practices. Indeed, in rural areas of the Central African Republic, mothers have inherited ancestral practices of introducing water and decoctions to their infants at an early age, either to water them or to treat colic. The reasons given above concerning the Internet can also be evoked here—with regard to residence—taking into account the ease of access to this means of information in an urban environment.

### **3) Correlation between mothers’ occupation and exclusive breastfeeding.**

Professional activity has a highly significant impact on the prevalence and

duration of breastfeeding. Housewives have a higher prevalence of breastfeeding and breastfeed longer than those who work outside the home [61]. Indeed, in our survey, the probability that a housewife in our series would exclusively breastfeed for up to 6 months was 11.8 times higher than those in other occupations, with a statistically significant difference ( $p < 0.001$  OR = 11.8 [3.58 - 38.87]). This result corroborates those of Agadir *et al.* [62] and Crost *et al.* [63].

## 5. Conclusion

The prevalence of exclusive breastfeeding remains low in rural and urban areas of the Central African Republic compared with WHO targets (50% by 2025). These results highlight the possibility of identifying mothers at risk of developing EBF - related difficulties in the Central African Republic. Given this situation, new impetus should be given to the promotion of exclusive breastfeeding. Hospitals, maternity wards and health centers will need to retrain their staff, while community-based initiatives will also need to be put in place. Psychological preparation of the mother is also essential, and should ideally take place before and during pregnancy.

## Author Contributions

All authors have contributed to the conduct of this work. All authors also declare that they have read and approved the final version of the manuscript and have no conflicts of interest.

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## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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## Appendix

### Survey sheet on “Mothers’ knowledge and practices of exclusive breastfeeding in the Central African Republic”.

Survey date: ...../...../...../

#### I. Socio-demographic characteristics

1. Mother’s identification

A. Full name: ..... Age: ..... Place of residence: .....

B. Marital status: /\_/ 1 = married; 2 = widowed; 3 = divorced; 4 = single

C. Regime: /\_/ 1 = monogamy; 2 = polygamy

D. Profession: /\_/ 1 = civil servant; 2 = merchant; 3 = craftswoman; 4 = housewife; 5 = other

E. Level of education: /\_/ 1 = No schooling; 2 = primary; 3 = secondary; 4 = higher education

F. Religion: /\_/ 1 = Muslim; 2 = Christian

G. Gender (no. of women): ..... Parity (no. of births): ..... Living child(ren).....

H. Age of last child: .....; Birth weight.....Kgs; Sex (M/F):.....

#### II. Mothers’ knowledge and practices regarding exclusive breastfeeding

1. Do you know about breastfeeding?

A. Know: [ ] B. Don’t know: [ ]

2. Do you know the advantages of breastfeeding? A. Don’t know: [ ] B. Know: [ ] Which ones: .....

3. Do you know the duration of exclusive breastfeeding?

A. Don’t know: [ ]

B. Know: [ ] Which one (in months): .....

4. Were you taught about exclusive breastfeeding during pregnancy or after delivery?

A. Yes [ ] B. No [ ]

5. When did you give your first feed?

A. Just after delivery [ ] B. Between 1st and 8th hour [ ] C. 8 hours or more [ ]

6. How often does your baby feed each day?

A. Several times [ ] B. On demand [ ]

7. What did you do with the colostrum (first yellowish milk)?

A. Give to newborn [ ] B. Throw it away [ ]

8. Before or after leaving the maternity hospital, did you give anything else in addition to breast milk to the 0 - 6 months old?

A. Not done [ ] Why: .....

B. Done [ ] Which ones: .....

#### III. Factors impeding good practice of exclusive breastfeeding.

1. In the mother

A. Not enough milk in the breasts: [ ]

B. Poor-quality milk: [ ]

C. Sore breasts: [ ]

D. Nipple malformation: [ ]

- E. Sick mother (HIV, breast abscess, breast cancer, etc.): [ ]
  - F. Very large nipples: [ ]
  - G. Impact of breast-feeding on the father-child relationship: [ ]
  - H. Medical recommendation: [ ]
  - I. Cultural: [ ]
  - J. Financial hardship to feed oneself for a good milky mottle: [ ]
  - K. Other: .....
2. In babies
- A. Refusal to suckle at birth: [ ]
  - B. Refusal to suck after illness: [ ]
  - C. Mother died at birth: [ ]
  - D. Congenital malformation : [ ]
  - E. Other: [ ]