

# Knowledge, Opinions and Attitudes of Mothers About Breastfeeding and Child Feeding in Rural Areas of Burkina Faso: A Study in Ouargaye's District Health Facilities

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**Abstract:** Malnutrition in the child is still a major public health problem in most developing countries such as Burkina Faso. Infant and young child feeding (IYCF) practices should be influenced by the mother's knowledge and attitude about the subject. We carried out a cross-sectional study in primary health care centers randomly selected. The objectives of our work were to study the mother's knowledge and attitudes about IYCF and analyze associated factors. In total, we surveyed 287 mothers. The average age of mothers was 26.7 years, 71.4% of them were uneducated and 94.5% were unemployed. The average number of gesture among mothers was 3.44. Among mothers, 15% was in underweight and 10.7% was in excess weight. Most mothers (82, 8%) admitted that colostrum has an advantage for the newborn and 87.8% were aware of the proper diet (exclusive breastfeeding) of children under six months of age. Slightly more than half (55%) of mothers had a low level of knowledge about the benefits of breastfeeding. Water supply ( $p=0.041$ ) and habitat type ( $p=0.001$ ) were statistically associated with the level of knowledge about the benefits of breastfeeding. About half (54%) of respondents were aware of the recommended delay of breastfeeding initiation in postpartum. Feeding in disease situation was known by the majority of mothers just as breastfeeding at night. About one in five mothers (18.5%) reported that children under six months of age need water supplementation. The discomfort to breastfeed in public was an unusual feeling (6%) and 87, 2% of respondents admitted that breastfeeding should be continued until the age of two years after birth. The level of knowledge of mothers about the advantages of breastfeeding was still low however most of them knew the adequate duration of EBF and the recommended duration of breastfeeding. Attitudes concerning breastfeeding were positives. Targeted interventions on maternal health services and communities could raise the level of knowledge about IYCF particularly on the benefits of EBF.

**Keywords:** Knowledge, Attitude, Infant and Young Child, Feeding, Breastfeeding

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## 1. Background

Exclusive breastfeeding (EBF) during the first six (6) months of life followed by sustained breastfeeding with adequate complementary feeding up to two (2) years or beyond are important prerequisites for better growth,

development and optimal child health [1-2]. However, in general, feeding practices are poorly optimal [3]. Indeed, only 45% of children under six months of age were exclusively breastfed worldwide in 2015 [4]. In Burkina Faso, according to the Demographic and Health Survey (DHS), only 25% of children fewer than six months of age were exclusively breastfed and 3% of children between 6 and

23 months of age were fed appropriately [5]. Malnutrition in children is still a public health problem in Burkina Faso [5]. Best practices in infants and young child feeding (IYCF) contribute to reducing the burden of morbidity and mortality associated with acute malnutrition [4], digestive and respiratory infections [6-9]. They also contribute to reducing the risk of chronic and metabolic diseases in adulthood [8, 10-11]. Mother's knowledge and opinions concerning feeding at childhood may be barriers or facilitating factors to recommended feeding practices. If mothers have adequate information about IYCF, their children could be fed appropriately. To this end, communication strategies such as information and awareness are actions to raise knowledge levels and promote attitudes to improve IYCF practices. The current study sets out to assess mothers' knowledge, opinions and attitudes about child feeding. The results could help health professionals and decision-makers to better refine their interventions.

## 2. Methodology

### 2.1. Sample Site

Ouargaye district in the Central-East Region of Burkina Faso covers twenty-nine (29) primary health facilities with a population of 341, 063 inhabitants in 2015. Yana, Gourmantche, and Bissa are the main ethnic groups.

### 2.2. Study Design

A descriptive study among mothers who were attending in selected primary health facilities for the periodic growth's monitoring of their children whose ages ranged from 6 to 36 months was carried out. The data were collected from July 25<sup>th</sup> to September 7<sup>th</sup>, 2015.

### 2.3. Sample Size

The minimum sample size for this study was calculated using the Schwartz formula for a descriptive study:  $n = (Z_{\alpha/2})^2 \times p \times (1-p) / \delta^2$ , with  $Z_{\alpha/2}$  the confidence level (the standard value of the 95% confidence level is 1.96),  $p$  is the probability of occurrence of the event and  $\delta$  the margin of error (set at 5%).

According to the DHS 2010 of Burkina Faso, 25% of children less than six months of age were exclusively breastfed and 3% of children aged 6 to 23 months were fed appropriately [5]. The prevalence of exclusive breastfeeding was used to calculate the minimum size of our sample. So, the sample  $n = 75$ . We have set a sample size of 300 mothers to investigate. To this end, ten (10) primary health care facilities were selected randomly to conduct the survey. The number of mothers to be investigated per primary health-care facilities was determined proportionally to the expected number of children to be examined in a healthy infant's consultation. In total, 300 were surveyed; thirteen (13) questionnaires were not exploitable and were not included in the analysis. The final size of our sample was 287.

### 2.4. Data Collection

Health promotion providers were trained to conduct the survey. During the duration of the survey, they visited weekly the selected primary health facilities. Ten (10) mothers were randomly selected from the list of women enrolled at each weekly child growth's monitoring session (Healthy Child Care). Data on mother's knowledge concerning breastfeeding, complementary feeding as well as their opinions and attitudes about infant and child feeding were collected. Information about the mother's socio-demographic characteristics (age, education level, occupation) and that of the household (the type of habitat, water supply) were also collected. Data were collected using a semi-structured questionnaire and a direct interview completed by extraction from health cards.

### 2.5. Data Analysis

Data were entered using Epi data and analyzed with SPSS software (version 21).

The level of knowledge about the benefits of breastfeeding was listed in a score. With each correct answer, one point (1) is allocated and zero (0) for each inappropriate response. The questions were the following: does EBF 1) Protects against infections? 2) Increases in child intelligence? 3) Promotes better dental eruption? 4) Improves length and weight growth? 5) Accelerates healing in case of illness? 6) Strengthens emotional ties between child and mother? 7) Prevents post-partum hemorrhage and 8) Constitutes a contraceptive method?

The score of the level of knowledge was achieved by operating the sum of points allocated to each answer on the total amount of possible points allocated to correct answers. The range of this score was between 0 and 1. The threshold of a good level of knowledge chosen was 0.6. Thus, the level of knowledge is considered good if the score is greater than or equal to 60% and low or poor if the score is less than 60%.

For analyzes, we used the usual statistics (frequency), measures of central tendency (mean, median) and dispersion (standard deviation, range). The chi-square test was used to analyze associations between variables with a significance level set at  $p < 5\%$ .

## 3. Results

### 3.1. Socio-Demographic Characteristics of the Respondents

Between July 25<sup>th</sup> to september 7<sup>th</sup> 2015, 287 mothers was included in this study. The average age of mothers was  $26.77 \pm 6.44$  years with extremes of 17 and 45 years and a median of 26 years. Table 1 displays mother's sociodemographic characteristics. Only one mother in five had formal education (20.2%). Majority of respondents were housewives (94.4%) and lived in banco habitats (68.5%). The current source of water supply was drilling (86%). However, we note that 14% of these households had like a water source, backwaters or

wells. The average number of gestures was 3.44 with extremes of one (1) and eleven (11). Approximately one-fifth (21.3%) of mothers were primigravidae.

**Table 1.** background characteristics of mothers.

Variable	Total number	Percentage (%)
Age of mother (years)		
< 25	124	44.4
[25-34[	114	40.9
≥ 35	41	14.7
Total	279	100
Education level		
illiterate	205	71.4
Non formal literate	24	8.4
Primary	35	12.2
Secondary	23	8
Total	287	100
Occupation		
Housewife	237	94.4
Small trader	6	2.4
salaried	4	1.6
Farmer	4	1.6
Total	251	100
Type of house		
Banco	196	68.5
Cement	90	31.5
Total	286	100
Source of water supply		
Drilling	221	8.6
Fountain	25	8.7
Well without curbstone	5	1.7
Well with curbstone	22	7.7
Backwater	13	4.5
Total	286	100
Number of pregnancies		
Primigravidae	61	21.3
Multigravidae	225	78.7
Total	286	100

**Table 3.** Factors associated with the level of knowledge of mothers about the benefits of EBF.

	Total number	Good level of knowledge (%)	p
Age of mothers (years)			
< 25	124	37.9	0.183
[25-34[	113	47.8	
≥ 35	41	51.2	
The education level of the mother			
Illiterate	204	43.1	0.297
Literate/Primary/Secondary	82	50	
Occupation			
Housewife/Farmer	243	44.4	0.41
Trader/salaried	6	66.7	
Type of house			
Banco	196	52	0.001
Cement	90	30	
Source of water supply			
Drilling/Fountain	246	47.6	0.041
Well/Bac water	40	30	
Number of Pregnancies			
Primigravidae	61	42.6	0.772
Multigravidae	225	45.8	

### 3.2. Knowledge About the Advantage of EBF

Almost all the respondents (91%) have ever heard advice about breastfeeding in general. Most mothers (89.5%) admit that breastfeeding protects against infections and 97.2% of them agree that it strengthens links between the child and mother as shown in table 2. Moreover, in our study, few mothers were aware of the role of exclusive breastfeeding in preventing postpartum hemorrhage (31.1%) and contraception (31.8%).

**Table 2.** Knowledge of mothers about the advantages of EBF.

Does exclusive breastfeeding (EBF)	Agree, yes Number (%)
	N =287
Protects against infections	256 (89.5%)
Increases child intelligence	130(45.5%)
Promotes better dental eruption	137(47.9%)
Improves length and weight growth	167(58.4%)
Accelerates healing in case of illness	192(67.1%)
Strengthens emotional ties between child and mother	278(97.2%)
Prevents postpartum hemorrhage	89(31.1%)
Constitutes a contraceptive method	91(31.8)

### 3.3. Level of Knowledge about the Benefits of EBF

Less than half of mothers (47.1%) had a good level of knowledge about the benefits of breastfeeding. Table 3 presents associated factors to the level of knowledge of mothers about benefits of EBF. We did not find any statistical association between mother's age ( $p=0.183$ ), education level ( $p=0.297$ ) or occupation ( $p=0.41$ ) with their level of knowledge about the benefits of EBF.

**3.4. Knowledge About Other Components of Breastfeeding and IYCF**

*Knowledge about breastfeeding initiation after birth and the interest of colostrum*

Just over half (54%) of mothers knew that babies should be breastfed in less than one hour after birth. The majority (82.8%) of mothers knew the interest of colostrum for the newborn.

*Knowledge about the duration of EBF and continuation of breastfeeding*

The majority of respondents (81.1%) admitted that the duration of exclusive breastfeeding was six (6) months after birth. The continuation of breastfeeding until at least two years of age was also well known among 87.2% of mothers interviewed.

*Knowledge about the composition of Complementary feeding*

He was asked mothers to name the groups of useful foods to compose the diet of a child of at least six months of age. Figure 1 summarizes the knowledge of mothers on the composition of food complementary. There is a good knowledge of the composition of food supplements but to a less degree regarding milk and dairy products, eggs, fruits and vegetables that were only mentioned by almost three of five mothers.

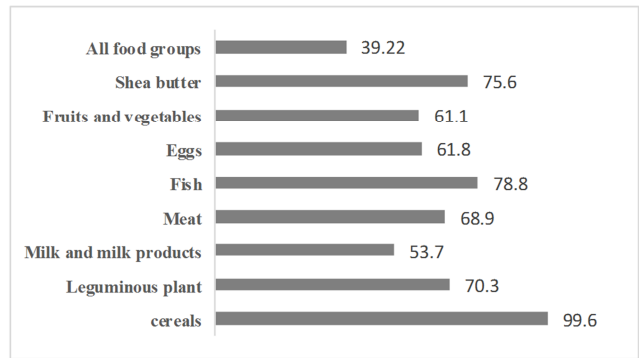


Figure 1. Percentage (%) of mothers who cited food groups (N=283).

**3.5. Mother's Opinions and Attitudes About Infants and Young Child Feeding (IYCF)**

The opinions and attitudes on breastfeeding were analyzed and displayed in table 4. Breast milk is the best food for the newborn: the conviction was widely expressed in 95.4% of mothers. About a fifth of mothers (18.5%) were aware that infants less than six months often need water intake and the vast majority of them agree that child should be fed in illness situation if conditions permit it. The embarrassment to breastfeed in public environment was weakly felt, only 6% of mothers have approved.

Table 4. Mother's opinions and attitudes about infant feeding.

	Agree (%)	Total number (N)
Breast milk is the best food for the newborn	95.4%	271
Breastfeeding makes thin lactating women	28.3%	286
Breastfeeding reduces the beauty of mother	31.1%	286
The baby should be breastfed when he is sick	98.6%	285
The baby should be breastfed if the mother is sick	96.5%	285
The baby under six (6) months needs a water intake	18.5%	286
It may be embarrassing to breastfeed in public	6%	285
The baby should be breastfed day and night	99.6%	284

**4. Discussion**

The purpose of this study was to assess mother's knowledge and attitudes about child feeding. We found that few mothers (47.1%) had good level of knowledge about the benefits of breastfeeding and 54% knew that baby should be breastfed less than one (1) hour after delivery knew. In contrast, most of them knew the adequate duration of EBF (81.1%) and continuation of breastfeeding (87.2%). Mother's opinions and attitudes concerning breastfeeding were positives.

**4.1. Socio-Demographic Characteristics**

The average age of mothers in our study was 26.77 ± 6.46 years. Mothers were relatively young in our study although respondents with children over two years were included. Despite their young age, they had an average of just over three histories of pregnancy. Eman and collaborators in a rural population of Egypt found a higher mean age (28.4 ± 5.4. years) in women with children less than two years [12].

The average age of mothers in our study is also lower than that reported by Mbada, which, in a study among mothers from of a semi-urban region of Nigeria has reported a mean age of 29 ± 4.96 years [13].

In the present study, 71.4% of mothers had not received any form of formal or no formal education. This situation undermines the impulses of social health and economic development. However, Eman found that 44% of mothers of children in his study were literate [12]. Furthermore, we noted in our study that 94.5% of mothers had no professional occupation. This result is similar to that found by Eman (92.3%) [12]. On the other hand, Chidozi reported a small proportion (16.2%) of mothers who were professionally inactive [13]. The difference with our study could be related to the place of residence of the respondents who were urban in Chidozi's study.

**4.2. Knowledge About Breastfeeding and Associated Factors**

Our study found that the vast majority of mothers (87.8%) admitted that breastfeeding is the proper feeding for infants

less than six months.

In the present study, less than half of mothers had a good level of knowledge about the benefits of EBF (47.1%). In Iran, Karimi who conducted a study among pregnant women reported a result slightly lower than ours. He noted that 50.3% of them had a good or very good level of knowledge [14]. The difference with our study could be related to the higher level of education of women in the study of Karimi; Moreover, in contrast to our study, the level of education was statistically associated with the level of knowledge about breastfeeding ( $p < 0.001$ ) in this Iranian study as in others conducted in Egypt and Kenyan [12, 15]. The low proportion of mothers with a good level of knowledge about breastfeeding in our study could be related to the very small proportion of educated women and also to the rural area of our survey. More often in our context, before the two last decade, rural women had low access to classical education and non-formal literacy. Besides, Mbada reported a proportion of 71.3% of mothers with a good level of knowledge about breastfeeding, which is well above the value observed in our study [13]. This difference with our study would be attributable to the fact that in the study of Mbada, mothers were selected from Baby-friendly health centers where the breastfeeding promotion and dissemination of knowledge about breastfeeding did. In addition, all the mothers in this study had at least primary level, 91.4% had a post-primary level. Although knowledge evaluation criteria are often different, several studies have reported good levels of knowledge of mothers concerning breastfeeding [13, 15-18]. On the other hand, Oche, in a semi-rural town of Nigeria has reported a very low proportion (31%) of mothers with a good level of knowledge on breastfeeding [19]. These differences could be related sociodemographic and cultural factors or related to the type of health facility; Oche has not specified whether the health facilities in which his study was carried out was Baby-Friendly Hospitals [19].

The current study reported that respectively 89.5% and 97.2% of mothers knew that EBF protects against infection and strengthens the affective ties of the couple mother-child. Our results are consistent with those found by Eman whose study's reported respectively proportions of 97.7% and 81.4% [12].

In our study, the less well-known aspects about the benefits of breastfeeding were the prevention of postpartum hemorrhage (31.1%) and contraception (31.8%); Eman reported respectively in the same order proportions of 4.6% and 34.2% [12]. The results found by Eman is consistent with our's concerning mother's knowledge on the role of EBF in contraception.

The low level of knowledge of mothers on the benefits of breastfeeding means to initiate and strengthen information and sensitization activities toward local leaders, health care providers, and other community members. Persad and collaborators have shown that a good knowledge of the benefits of breastfeeding during prenatal visits was associated with better breastfeeding practices [20]. Chaturvedi has also made the same observation by showing

that sensitization during antenatal visits improved mothers' knowledge about breastfeeding and their attitudes [21].

#### **4.3. Delay of Initiation to Breastfeeding**

In our study, just over half (54%) of the mothers knew the ideal time of breastfeeding initiation which must be within one hour after birth. Our result is lower than that reported by Eman (79.8%) [12] but significantly beyond that reported by Chaudhary (10%) [22]. The delay of breastfeeding initiation after birth is important because it prolongation increases the risk of newborn infection and death [23-25].

#### **4.4. Knowledge About the Interest of Colostrum**

In the current study, 82.8% of mothers admitted that colostrum was nutritious for the newborn, which is close to the result in Eman's study (87.6%) [12]. Chaudhary reported contrariwise a smaller proportion (25%) [22]. Our result is different from Lucen's whose study revealed a very low level of knowledge about the benefits of colostrum in 87% of respondents [26]. This difference could be related to the young age of the respondents in Lucen's study where the average age was 22 years. We found a statistically significant association between knowledge about colostrum interest and maternal age ( $p=0.016$ ). Obstetric history and therefore having attended several times maternal health care services and having already breastfed could also explain this difference; Lucen did not specify obstetrical history of respondents, contrary to our study in which mothers enquired had an average of three children.

#### **4.5. Knowledge About the Duration of EBF**

In our study, although mothers had low levels of knowledge about advantages of breastfeeding, most of them (81.1%) had good knowledge on the duration of exclusive breastfeeding and the interest of colostrum (82.8%). Our result concerning knowledge about the duration of exclusive breastfeeding was greater than that reported by Lucen in Bangladesh in female garment workers (74%) [26]. In Eman's study, the duration of EBF was not well known by mothers (33.6%) [12].

#### **4.6. Opinions and Attitudes About Infant and Young Child Feeding(IYCF)**

Nearly one in four mothers (78%) admitted that infant should be breastfed on demand. This is important because only no restricted and prolonged breastfeeding (at least ten minutes) are necessary to satisfy infant's nutritional requirement.

In the current study, most mothers had a good attitude about breastfeeding in a disease situation. Nevertheless, in Eman's study, mother's attitudes were few adequate, only 20.2% them thought that breastfeeding should be avoided when a child is ill and 83.4% if the mother is sick [12]. Breastfeeding in situations of illness, if conditions permit it, is well signposted and can reduce the risk of malnutrition and

the weakening of the child's health. For the mother, it reduces the risk of breast's block.

Almost all mothers (99.6%) had considered that young child should be breastfed day and night. In fact, nighttime feedings promote more prolactin secretion which is the hormone that stimulates lactation milk production. About a third (31.1%) of mothers maintained the opinion that breastfeeding may affect beauty and youth. This is close but lower than Vijayalakshmi's, whose study in lactating mothers reported that 40.2% of them believed that breastfeeding might affect their beauty [16]. Eman, however, reported a higher proportion of rural Egyptian women (76.5%) who believed that breastfeeding might affect their physiognomy [12].

In the present study, the discomfort with breastfeeding in public was very little experienced by mothers (6%). A study in Egypt showed that 26.1% of mothers felt that breastfeeding could be embarrassing [12]. Ogonna in Nigerian's lactating women reported that 20.4% of them had never breastfed in public [27]. McCann in the USA noted that embarrassed to breastfeed in public was one of the reasons impeding the prolongation of breastfeeding [28].

Almost a fifth of mothers (18.5%) has admitted that infants under six months often need an extra water intake. The most frequently evoked reasons were the ambient heat of time and the fact that infant could be thirsty. Another cultural order reasons such as supplying water as a mark of welcome to the newborn are also wide-spread in the African context. This belief reduces the chance of exclusive breastfeeding and increases the risk of mortality and neonatal mortality among babies. Neonatal mortality accounts for 41% of deaths before five years with 36% which are due to infections. Also, the vast majority of these deaths befall in Africa and South Asia [25].

## 5. Conclusion

The current study showed that majority of respondents had ever heard advice about breastfeeding, the level of knowledge of mothers concerning the benefits of breastfeeding was low and not statistically associated with the majority of socio-demographic characteristics. However, many mothers knew the adequate duration of EBF and the minimum duration of breastfeeding recommended. Mother's knowledge concerning food complementation was satisfactory. Overall, mother's opinion and attitude about infant and young child feeding notably on breastfeeding were positive.

The low levels of knowledge about breastfeeding reflect a failure in communication strategies. The contribution of health-care services and health professionals to information, awareness and support for women before pregnancy, in the period of pregnancy and after delivery could help to improve knowledge and opinions in the domain of the infant and child feeding. The implementation of community-based and early educational strategies could also support actions in health care services. A particular mention must be made on the quality of communication delivered.

### *List of abbreviations*

EBF: Exclusive Breastfeeding IYCF: Infant and Young Child Feeding. WHO: World Health Organization. UNICEF: United Nation Children'S Fund

### *Declarations*

a Ethics approval and consent to participate

Our study required the approval of the local committee. Maternal consent was requested prior to the investigation. Questionnaires and data did not identify the respondents.

b Consent for publication

Not applicable

c Availability of data and material

Please contact the author for data requests

d Competing interests

The authors declare that there is no conflict of interests regarding the publication of this paper.

e Funding

No fund was provided for this research

## Authors' Contributions

Baperman Siri developed the concept, participated in data collection and analysis, and wrote the paper. Marcel Bengaly, Joseph Catraye and Zeynab Kouanda contributed in data analysis and critically reviewed of the paper. Soumaila Coulibaly, Franck Garanet and Evrard Sorgho participated in data analysis. All the authors read and approved the final paper.

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