

# Exclusive Breastfeeding Practice and Its Factors in Rural Areas of Burkina Faso

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## Abstract

**Background:** The recommendation of the WHO and UNICEF is that all infants should be exclusively breastfed up to 6 months of age. Identifying associated factors to exclusively breastfeeding is crucial to improve this key public health intervention. The objectives of the study were to investigate rates of exclusive breastfeeding and to identify potential associated factors. **Methods:** A Community based cross-sectional study design was conducted in three health districts. Cluster sampling was used. For the community based cross-sectional study, a total of 1832 infants was included. Exclusive breastfeeding have been investigated among the 563 under 6 month's infants. The associations between exclusive breastfeeding and independent variables were tested using the Chi-square test. Crude Odds ratios with 95 % confidence intervals were used to investigate the factors independently associated with exclusively breastfeeding. **Results:** Proportion of infant 0 - 5.9 months of age who are fed exclusively with breastmilk was 40.0%. Ear of age for mother was found to be more likely to practice exclusive breastfeeding, COR [95CI%] = 2.11 [1.24 - 3.60] for 15 - 20 years of age and 2.0 [1.22 - 3.26]. Receiving advices, on exclusive breastfeeding was found to be more likely to practice exclusive breastfeeding, COR: 2.07, 95% CI: [1.44 - 2.98]. Mothers who have practice early initiation to breastfeeding were found to be more likely to practice exclusive breastfeeding COR: 1.62, 95% CI: [1.15 - 2.27]. Skilled delivery was found to be more likely to practice exclusive breastfeeding than non-skilled deliveries, COR: 1.66, 95% CI: [1.16 - 2.35]. Low numbers of living children by mother, young children, were found to be more likely to practice exclusive breastfeeding. **Conclusions:** Exclusive breastfeeding continues to be low in rural areas of Burkina Faso. As Exclusive breastfeeding is associated to lower morbidity and mortality risk, improving the skills of health providers to give adequate feeding support to the mothers is critical for promoting exclusively breastfeeding.

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## Keywords

Prevalence, Exclusive Breastfeeding, Rural Areas, Burkina Faso

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## 1. Background

The recommendation of the WHO and UNICEF is that all infants should be exclusively breastfed up to 6 months of age [1] [2]. Exclusive breastfeeding among under 6 month's infants is one of the most effective interventions to reduce child mortality [3] [4]. Exclusive breastfeeding has benefits to child health and development.

Breast milk is the best food for a child's health, growth and development during the 6 first months. All the vitamins, minerals, enzymes and antibodies need by a child are provided by the breast milk [2].

Breast milk is an unequalled way of provision of best food for infant's healthy growth and development [5] and for reduction of infant morbidity and mortality [6] [7]. Exclusive breastfeeding is benefit to the mother, preventing post-partum hemorrhage and allows spacing of pregnancies [1].

Despite all recommendations and benefits, according to the UNICEF, exclusive breastfeeding rate for the first six month has not changed significantly since 1990 and is around 36% [8] [9].

Despite these benefits, less than 50% of infants (WHO target) in resource limited settings are exclusively breastfeed. Identifying associated factors to exclusively breastfeeding is crucial to improve this key public health intervention.

The objectives of the study were to investigate rates of exclusive breastfeeding among under 6 months and to identify potential factors associated among Burkina Faso rural settings mothers.

## 2. Methods

A Community based cross-sectional study design was conducted in three districts of East region (Manni and Gayéri) and center-north region (Boulssa) from November to December 2011. Manni and Gayéri are two of the six districts of the East region. Boulssa is one of the three district of the center-north region. All rural mothers who have children less than 24 months were considered as source population. The procedures for determining survey sample size are designed to take into account the requirements for a follow-up survey round of a program evaluation as initial round in the concerned districts.

As the survey was for implementing feeding intervention, we used the percentage of infants who were stunted as the indicator for calculating the sample size in each district.

The following basic equation has been used to calculate the required sample size for each district.

$$n = D * \left[ (Z\alpha + Z\beta)^2 * (P1 * (1 - P1) + P2 * (1 - P2)) / (P2 - P1)^2 \right]$$

Cluster sampling, as probability sampling methods was used. In each district, villages were the clusters. Size of each cluster was available from the last population census to sample selection. Probability-proportional-to-size (PPS) selection procedures were used.

Random-walk method for selecting sample households has been used.

The data were collected by using a structured and pretested interview questionnaire.

The study used one major questionnaire with socio-demographic factors, maternal factors, child related factors and characteristics of child feeding practices were included in the survey.

For the community based cross-sectional study, total sample size was 1832 infants.

For the investigation of exclusive breastfeeding, total sample size of under 6 month's infants was 563.

Descriptive statistics were used. The associations between exclusive breastfeeding and independent variables were tested using the Chi-square test. Crude Odds ratios (COR) with 95% confidence intervals (95% CI) were used to investigate the factors independently associated with exclusively breastfeeding. All of the results were considered statistically significant at  $P < 0.05$ .

Ethical clearance was obtained from Burkina Faso ethical committee for health research. At the time of data collection, a verbal and written consent was taken from the participants.

### 3. Results

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

Among the 563 mother-infants, the majority (52.8%) of mothers were in the age group 21 - 30 years. The mean age of mothers was  $25.3 \pm 6.2$  years.

The highest proportion of mothers (90.8%) had not attended primary school. All of mothers of the mothers were housewives. The average number of living children with mother was 3.

The average number of pregnancies per woman was 3.7. More than 80 % of mothers had more than one pregnancy (**Table 1**).

The mean age of infants was  $2.95 \pm 1.6$  months, and 49.4% were boys and 50.6% girls.

The majority (76.6%) of children had health care carte showing that they have contact with health facilities for care.

#### 3.2. Advices Received during Pregnancy

The majority (78.2%) of mothers received antenatal care. During pregnancy, 62.0% of mothers have received advices on exclusively breastfeeding; 52.8% received advice on child growth and 52.8% on child feeding.

Out of participants, 62.2% of mothers have been delivered on health facilities by skilled care providers.

**Table 1.** Baseline characteristics of the participants.

	n	%
<b>Mothers age (years)</b>		
15 - 20	162	28.8
21 - 30	297	52.8
≥31	104	18.4
<b>Formal school education of mothers</b>		
Yes	52	9.2
No	511	90.8
<b>Living children number by mother</b>		
1	146	25.9
2 - 3	235	41.7
4 - 6	154	27.4
≥6	28	5.0
<b>Number of pregnancies by mother</b>		
1	118	21.0
2 - 6	381	67.7
≥6	64	11.4

Out of participants, 43.7% of infants have been early breastfeed (**Table 2**).

### 3.3. Exclusive Breastfeeding

Proportion of infant 0 - 5.9 months of age who are fed exclusively with breast-milk was 40.0%.

**Table 3** gives this percentage at different age of infants.

The percentage of exclusively breastfeed infants decreases from 46.9% at 0 - 1.9 months of age to 29.0% at 4 - 5.9 months of age (**Figure 1**).

The percentage of exclusively breastfeed infants decreases from 1 month to 6 months of age (**Figure 2**).

### 3.4. Predominant Breastfeeding

Proportion of infants 0 - 5.9 months of age who are predominantly breastfed (infants who received breastmilk as predominant source of nourishment during previous day, but also receive other fluid) was 83.5% (470/563).

### 3.5. Exclusive Breastfeeding Factors

**Table 4** shows the results of bivariate analyses.

Age of mothers, advices on exclusive breastfeeding during pregnancy, early breastfeeding initiation, delivery by skilled care providers, number of living children by mother and children age were associated with exclusive breastfeeding.

Having less than 31 year of age for mother was found to be more likely to practice exclusive breastfeeding, COR: 2.11, 95% CI: [1.24 - 3.60] for 15 - 20 years of age and COR: 2.0, 95% CI: [1.22 - 3.26] for 21 - 30 years,  $p = 0.01$ .

**Table 2.** Care and advices during the pregnancy period.

	n	%
<b>Number of antenatal care contact</b>		
0	123	21.8
1 - 2	75	13.3
3 - 4	365	64.8
<b>Advice on Exclusively breastfeeding</b>		
Yes	349	62.0
No	214	38.0
<b>Advice on child growth</b>		
Yes	297	52.8
No	266	47.2
<b>Advice on child feeding</b>		
Yes	297	52.8
No	266	47.2
<b>Skilled birth</b>		
Yes	350	62.2
No	213	37.8
<b>Early breastfeeding initiation</b>		
Yes	246	43.7
No	317	56.3

**Table 3.** Exclusive breastfeeding indicators.

	n	%
Proportion of infant 0 - 1.9 months of age who are fed exclusively with breastmilk	213	46.9
Proportion of infant 2 - 3.9 months of age who are fed exclusively with breastmilk	188	41.5
Proportion of infant 4 - 5.9 months of age who are fed exclusively with breastmilk	162	29.0
Proportion of infant 0 - 3.9 months of age who are fed exclusively with breastmilk	401	44.4
Proportion of infant 0 - 5.9 months of age who are fed exclusively with breastmilk	563	40.0

Receiving advices, during pregnancy, on exclusive breastfeeding was found to be more likely to practice exclusive breastfeeding, COR: 2.07, 95% CI: [1.44 - 2.98],  $p \leq 0.001$ .

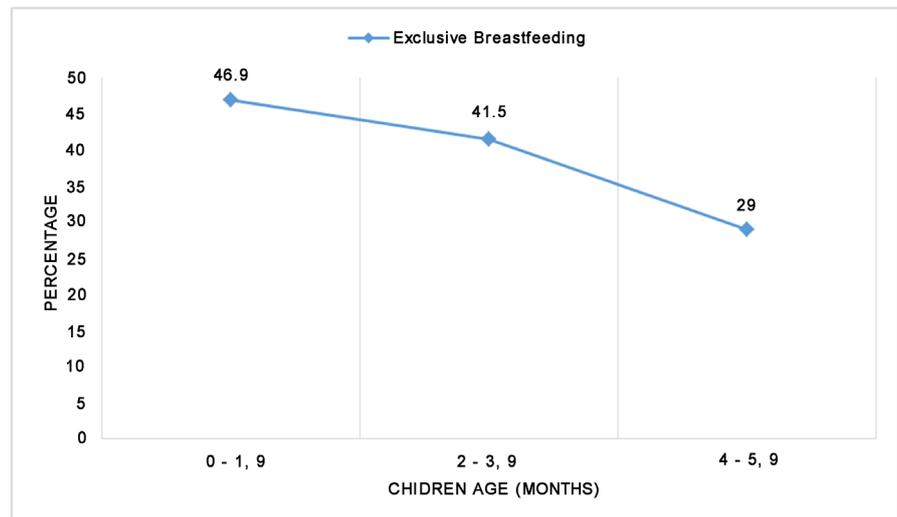
Mother who have practice early initiation to breastfeeding were found to be more likely to practice exclusive breastfeeding COR: 1.62, 95% CI: [1.15 - 2.27],  $p = 0.004$ .

Skilled delivery was found to be more likely to practice exclusive breastfeeding than non-skilled deliveries, COR: 1.66, 95% CI: [1.16 - 2.35],  $p = 0.004$ .

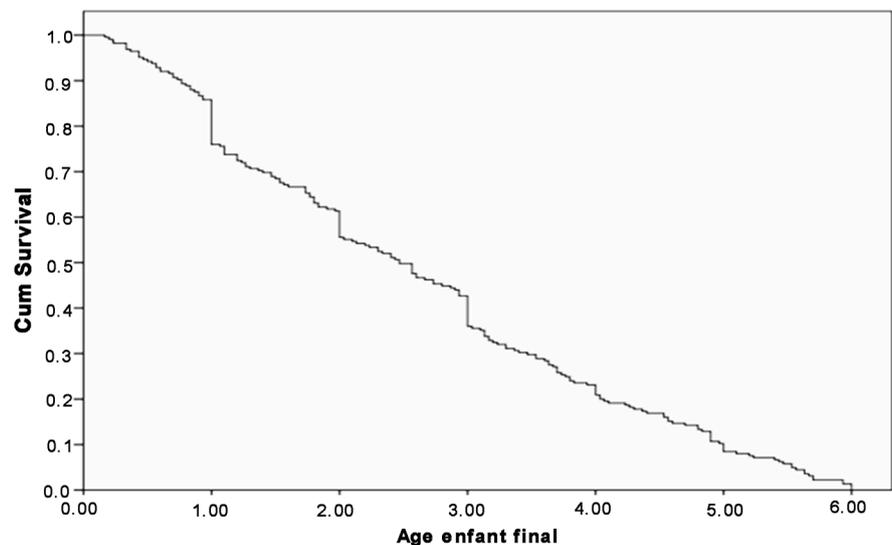
Low number of living children by mother, young children, was found to be more likely to practice exclusive breastfeeding.

#### 4. Discussion

The WHO sets optimal breastfeeding prevalence at 90%. In the low-income countries, only 39% of children aged less than 6 months are exclusively breastfed



**Figure 1.** Percentage of exclusive breastfeeding at different periods of child life.



**Figure 2.** Decrease of the percentage of exclusive breastfeeding during the six first months.

[1]. The prevalence of exclusively breastfeeding was 40.0% in this study. The prevalence of exclusively breastfeeding [10] for West Africa, East Africa, Central Africa and Southern Africa was 32.64% (95% CI 25.85 to 39.43), 53.48% (95% CI 40.14 to 66.82), 23.70% (95% CI 5.37 to 42.03) and 56.57% (95% CI 53.20 to 59.95), respectively. In West Africa, Cote d'Ivoire reported the lowest prevalence of exclusively breastfeeding of 13.15%. The corresponding prevalence reported in East Africa, Central Africa and Southern Africa was 13.45% (Comoros), 6.04% (Gabon) and 48.66% (Namibia).

In this study, the prevalence of predominant breastfeeding was high (83.5%). The prevalence of predominant breastfeeding [10] for West Africa, East Africa, Central Africa and Southern Africa was 43.67% (95% CI 37.22 to 55.52), 17.63% (95% CI 12.70 to 22.55), 31.63% (95% CI 19.77 to 43.48) and 13.07% (95% CI

**Table 4.** Univariate analysis showing association of factors with exclusive breastfeeding.

	n		OR[95%CI]	p-value
<b>Mothers age (years)</b>				
15 - 20	162	43.8	2.11 [1.24 - 3.60]	0.01
21 - 30	297	42.4	2.0 [1.22 - 3.26]	
≥31	104	26.9	1.0	
<b>Formal school education of mothers</b>				
Yes	52	42.3	1.11 [0.62 - 1.98]	0.71
No	511	39.7	1.0	
<b>Children sex</b>				
Girls	278	40.6	1.05 [0.75-1.48]	0.74
Boys	285	39.3	1.0	
<b>Advice on Exclusively breastfeeding</b>				
Yes	349	46.4	2.07 [1.44 - 2.98]	≤0.001
No	214	29.4	1.0	
<b>Skilled birth</b>				
Yes	350	47.5	1.66 [1.16 - 2.35]	0.004
No	213	35.2	1.0	
<b>Early breastfeeding initiation</b>				
Yes	246	48.2	1.62 [1.15 - 2.27]	0.004
No	317	36.6	1.0	
<b>Number of pregnancies by mother</b>				
1	118	40.7	1.89 [0.97 - 3.68]	0.06
2 - 5	381	42.0	2.00 [1.10 - 3.61]	
≥6	64	26.6	1.0	
<b>Number of living children</b>				
1	146	40.4	8.81 [2.01 - 38.56]	0.02
2 - 3	235	44.3	10.32 [2.39 - 44.48]	
4 - 5	154	39.0	8.29 [1.9 - 36.24]	
≥6	28	7.1	1.0	
<b>Children Age (months)</b>				
0 - 1.9	213	46.9	1.60 [1.02 - 2.51]	0.002
2 - 3.9	188	41.5	2.16 [1.4 - 3.33]	
4 - 5.9	162	29.0	1.0	

10.77 to 15.38), respectively. Countries with the lowest prevalence of PBF were Gambia (21.75%) in West Africa, Kenya (6.52%) in East Africa, Gabon (19.62%) in Central Africa and Lesotho (8.25%) in Southern Africa.

The target of WHO for exclusively breastfeeding is more than 50% [11]. The overall exclusively breastfeeding prevalence across the countries was less than 50%.

There is evidence that infants who are exclusively breastfed during the first months have lower morbidity and mortality risk, due to reductions in deaths caused by infectious diseases [6] [7] [12] [13] [14].

Despite these benefits, our findings show that the prevalence of exclusively breastfeeding was lower than the WHO target of 50%. It is similar to the recorded prevalence of many low income countries [10].

Young mothers aged less than 31 year; receiving advice on exclusive breast-

feeding; mothers who have practice early initiation to breastfeeding; skilled delivery; and mother with low number of living children; were found to be more likely to practice exclusive breastfeeding. Utilization of health facility services, support from the health personnel, and counseling on breastfeeding support can increase the practice of exclusive breastfeeding [15] [16].

Our study found that the overall/pooled prevalence of predominant breastfeeding is high (83.3%). Target is a lower prevalence, as predominant breastfeeding has a risk effect on an infant's health. Optimal breastfeeding prevalence is at 90% with less than 10% of predominant breastfeeding.

## 5. Conclusion

This study demonstrates that exclusive breastfeeding continues to be low in rural areas of Burkina Faso, and less than target level of 50%. But the prevalence of predominant breastfeeding was high (83.3%). Age of mothers, advices on exclusive breastfeeding during pregnancy, early breastfeeding initiation, delivery by skilled care providers, number of living children by mother and children age were associated with exclusive breastfeeding practice.

As exclusive breastfeeding is associated to lower morbidity and mortality risk, improving the skills of health providers to give adequate feeding support to the mothers during prenatal care visits and after delivery is critical for promoting exclusively breastfeeding.

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## Author Contributions

All authors contributed to study design, literature review, data collection, data analysis and interpretation, and writing. All authors revised and agreed on the views expressed in the manuscript.

## Conflicts of Interest

The authors declare no conflict of interest.

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