

# Prevalence of and barriers to exclusive breast feeding among mothers of infants in selected hospitals in Mangalore. India

## Prevalencia y barreras para la lactancia materna exclusiva en un hospital en Mangalore, India

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### Abstract

**Introduction.** UNICEF and WHO recommend exclusive breastfeeding (EBF) as crucial for achieving sustainable development goals. **Materials and Methods:** This descriptive cross-sectional study was conducted among mothers of infants aged 6 to 12 months to estimate the prevalence of and barriers to exclusive breastfeeding. Data were collected from 440 mothers using structured, validated tools from May 2022 to January 2023. **Results.** Analysis revealed that the prevalence of EBF among mothers in a selected hospital in Mangalore is 58.9%. The identified barriers included inadequate breast milk (42.5%), excessive concern about the baby's weight gain (41.4%), difficulties with proper latching (26.5%), maternal medications (28.2%), infant illness (22.7%), lack of awareness regarding EBF (12.2%), the need to resume work (12.2%), time constraints (12.2%), family pressure to introduce formula due to perceived poor weight gain (12.2%), breast complications (9.9%), subsequent pregnancies (7.7%), lack of family support (5.5%), lack of partner support (5%), and misinformation (1.7%). Significant associations were found between EBF and factors such as exposure to pre-pregnancy breastfeeding education, place of residence, sources of breastfeeding information, number of antenatal visits, type of delivery, and the immediate initiation of breastfeeding, all at a significance level of 0.001. **Conclusion.** Pre-pregnancy education on breastfeeding enhances the immediate initiation of breastfeeding, reduces barriers to EBF, and promotes adherence to EBF.

**Key words:** Prevalence, Barriers, Exclusive Breastfeeding

### Resumen

**Introducción.** El Fondo de las Naciones Unidas para la Infancia (UNICEF, por sus siglas en inglés) y la Organización Mundial de la Salud (OMS) recomiendan la lactancia materna exclusiva (LME) como elemento crucial para alcanzar los objetivos de desarrollo sustentable. **Materiales y métodos.** Este estudio descriptivo y transversal, se realizó entre madres de lactantes de entre 6 y 12 meses para estimar la prevalencia de los obstáculos a la lactancia materna exclusiva; entre mayo de 2022 y enero de 2023 se recolectaron datos de 440 madres en un hospital seleccionado de Mangalore, India, mediante herramientas estructuradas y validadas con este fin. **Resultados.** El análisis reveló que la prevalencia de la LME fue de 58.9%, entre los obstáculos identificadas se identificaron la insuficiencia de leche materna (42.5%), excesiva preocupación por el aumento de peso del bebé (41.4%), dificultades para una correcta prensión (26.5%), medicación materna (28.2%), enfermedades de la o el bebé (22.7%), falta de concientización sobre la LME (12.2%), necesidad de reanudar el trabajo remunerado (12.2%), limitaciones de tiempo (12.2%) y la presión familiar para introducir leche artificial, debido a la percepción de un peso insuficiente (12.2%), complicaciones mamarias (9.9%), embarazos posteriores (7.7%), falta de apoyo familiar (5.5%), falta de apoyo de la pareja (5%) y desinformación (1.7%). Se encontraron asociaciones significativas entre la LME y factores como la exposición a la educación sobre el tema antes del embarazo, el lugar de residencia, fuentes de información, número de consultas prenatales, tipo de parto e inicio inmediato de la lactancia materna (LM), todo ello con un nivel de significación de 0.001. **Conclusiones.** La educación previa al embarazo sobre LM incrementa su inicio inmediato, reduce los obstáculos a la LME y promueve su adherencia.

**Palabras clave:** prevalencia, barreras, lactancia materna exclusiva.



## Introduction

Infants should be exclusively breastfed for the first six months, and then receive complementary foods while continuing breastfeeding for up to two years or more to support their growth and nutrition.<sup>1</sup> Exclusive breastfeeding (EBF) involves providing new-borns with only breast milk, excluding any medications or vitamins prescribed by a doctor.<sup>2,3</sup> EBF is recognized as one of the most effective strategies to reduce infant mortality, which stood at 27.7 deaths per 1,000 live births in 2022.<sup>4,5</sup> However, there is significant variation in EBF rates across different countries and even within regions of the same country.<sup>6,7</sup> Key factors contributing to higher EBF rates include maternal awareness, educational status, and the frequency of antenatal visits.<sup>8</sup>

In India, the prevalence of EBF varies regionally, with rates of 79.2% in the southern regions and 68.0% in the north-eastern regions.<sup>9</sup> However, the rate of EBF declines as infants grow older, dropping to 43.7% by the fifth month in the south and 54.0% in the northeast. UNICEF and WHO recommend EBF to achieve sustainable development goals.<sup>10</sup> Despite ongoing efforts from both governmental and non-governmental organizations, EBF in India remains low, with only 46.4% of mothers practicing it between 2008 and 2012, according to the National Family Health Survey.<sup>11</sup>

From 2012 onward, the World Health Assembly set a target of reaching 50% EBF by 2025. India has surpassed this goal, currently achieving a rate of 55%. Promoting EBF could prevent approximately 100,000 infant deaths and reduce global economic losses by 3%.<sup>12,13</sup>

Given the influence of mass media and the diverse categories of healthcare professionals serving different regions of Karnataka, the factors affecting EBF may have changed. Therefore, this study aims to estimate the prevalence of EBF and identify the barriers to EBF among mothers.

## Materials and Methods

**Study Design and Setting:** This study employed a descriptive cross-sectional survey design. Data were collected from mothers of infants aged 6 to 12 months who visited the immunization and

paediatric outpatient department at a tertiary care center in Mangalore.

**Study Participants and Sampling:** The sample size was determined based on a prevalence of exclusive breastfeeding (EBF) of 49.7%<sup>14</sup>, with a permissible error of 4.5% and a 95% confidence interval. This resulted in a calculated sample size of 440. The study included all mothers with infants aged 6 to 12 months, regardless of their delivery setting, who visited the hospital and were willing to provide information. Mothers who were unable to read and understand Kannada or English were excluded from the study.

**Data Collection Tools and Techniques:** Three structured, validated tools were employed for data collection: the first tool gathered baseline characteristics of mothers and infants, the second assessed the prevalence of EBF, and the third identified barriers to exclusive breastfeeding. After obtaining informed consent from participants, data were collected via questionnaires. The data collection period lasted nine months. The collected data were compiled in Microsoft Excel for analysis. Descriptive statistics, including frequency and percentage, were used to analyse baseline characteristics and barriers to EBF. The association between EBF and various variables was examined using the chi-square test.

**Ethical Clearance:** Ethical approval was obtained from the Institutional Ethics Committee. The investigators familiarized themselves with the subjects, visiting the immunization and paediatric outpatient department of the hospital, explained the study's purpose, sought their cooperation, and ensured the confidentiality of their responses. Informed consent was obtained from participants willing to take part in the study.

**Results:** The analysed data regarding baseline characteristics of mothers and infants are presented in Tables 1 and 2. Most mothers (53%) were aged between 26 and 30 years, while only 1.1% were under 21. The majority (55.6%) had completed pre-university education, and 79.1% identified as homemakers. All mothers (100%) were satisfied with their baby's gender, and 97.7% had singleton pregnancies. Additionally, 53% of mothers had nine or more antenatal visits. Most infants (54.1%) had a birth weight between 2.5 and 3 kg, and 53% of the infants were male. The

prevalence of exclusive breastfeeding among mothers of infants at the selected hospital in Mangalore was found to be 58.9%. Barriers to exclusive breastfeeding are outlined in Table 3.

Analysis of the association between exclusive breastfeeding and various factors is summarized in Table 4. The data indicated significant associations between EBF and variables such as exposure to pre-pregnancy breastfeeding education ( $\chi^2 = 25.763$ ), place of residence ( $\chi^2 = 19.008$ ), source of information on breastfeeding ( $\chi^2 = 7.900$ ), number of antenatal visits ( $\chi^2 = 20.236$ ), type of delivery ( $\chi^2 = 15.842$ ), and initiation of breastfeeding ( $\chi^2 = 37.171$ ), all at a significance level of  $p < 0.001$ . No significant associations were found between EBF and factors such as age, education, occupation, type of family, number of children, place of delivery, gender, or weight of the baby.

**Table 1. Frequency and distribution of baseline proforma of mother, n = 440**

Variables	f	%
<b>Place of Residence</b>		
a. Rural	231	52.5
b. Urban	158	35.9
c. Semi urban	51	11.6
<b>Type of family</b>		
a. Nuclear	261	59.3
b. Joint	179	40.7
<b>Exposure to teaching on breast feeding</b>		
a. Yes	368	83.6
b. No	72	14.4
<b>Number of Children</b>		
a. 2	368	86.6
b. $\geq 2$	72	16.4
<b>Source of information on Breast feeding</b>		
a. Family members	415	94.3
b. Antenatal clinic	25	5.7
c. Mass media	0	0.0
<b>Type of delivery</b>		
a. Normal	290	65.9
b. Caesarean section	143	32.5
c. Instrumental	0	0.0
<b>Place of delivery</b>		
a. Home	11	2.5
b. Govt Hospital /PHC	103	23.4
c. Nursing homes/ private hospital	326	74.1

Source: own data

**Table 2. Frequency and distribution of baseline proforma of the baby, n = 440.**

Variables	f	%
<b>How old is your infant</b>		
a. 6-8 months	175	39.8
b. 8-10 months	137	31.1
c. 10-12 months	128	29.1
<b>Birth Order</b>		
a. First	229	52.0
b. Second	163	37.0
c. Third	36	8.2
d. $\geq 3$	12	2.7

Source: own data.

**Table 3. Frequency and percentage of barriers to Exclusive breast feeding, n=440**

Sl. o	Variables	f	%
	<b>Variables pertaining to</b>		
1.	Inadequate breastmilk	77	42.5
2.	Lack of awareness regarding EBF	22	12.2
3.	Need of resuming the work	22	12.2
4.	Medications taken by the mother	51	28.2
5.	Breast complications	18	9.9
6.	Next pregnancy	14	7.7
7.	Time constraints	22	12.2
8.	Over concern regarding babies weight gain dueto poor weight gainofthebaby	75	41.4
9.	Pressurefromfamilymember stostartformulafeedingdueto weightgainofthebaby	22	12.2
	<b>Variables pertaining to Baby</b>		
10.	Inability of the baby to latch correctly	48	26.5
11.	Sickness of baby	41	22.7
	<b>Other variables</b>		
12.	Lack of support from partner	9	5.0
13.	Lack of support from family	10	5.5
14.	Wrong information	3	1.7

Source: own data

**Table 4. Chi square value, d.f. and p value showing association of EBF to different variables, n=440**

Variables	EBF				Chi square value	d.f.	P	
	No		Yes					
	Count	Row N%	Count	Row N%				
<b>Exposure to pre pregnancy teaching on breast feeding</b>								
a. Yes	132	35.9	236	64.1	25.763	1	0.000	HS*
b. No	49	68.1	23	31.9				
<b>Place of Residence</b>								
a. Rural	73	31.6	158	68.4	19.008	2	0.000	HS*
b. Urban	79	50.0	79	50				
c. Semi urban	29	56.9	22	43.1				
<b>Source of information on Breast feeding</b>								
a. Family members	164	39.5	251	60.5	7.900	1	0.005	HS*
b. Antenatal clinic	17	68	8	32.0				
<b>Number of antenatal visits</b>								
a. ≤ 4	22	73.3	8	26.7	20.236	3	0.000	HS*
b. 4-6	36	50.0	36	50.0				
c. 6-9	44	41.9	61	58.1				
<b>Type of delivery</b>								
a. Normal	101	34.8	189	65.2	15.842	2	0.00	HS*
b. Caesarean section	78	54.5	65	45.5				
c. Instrumental	2	28.6	5	71.4				
a. Second	75	46	88	54				
b. Third	16	44.4	20	55.6				
c. ≥ 3	4	33.3	8	66.7				
<b>Initiation of Breastfeeding</b>								
a. Soon after birth	97	31.7	209	68.3	37.171	3	0.000	HS*
b. Within two hours	57	64	32	36				
c. After four hours	13	59.1	9	40.9				
d. After 24 hours	14	60.9	9	39.1				

Source: own data

## Discussion

In the study involving 440 mothers, 259 (58.9%) practiced exclusive breastfeeding (EBF), while 181 (41.1%) did not. This indicates a prevalence of EBF at 58.9%.

A cross-sectional study conducted in a rural community in central Gujarat, India, aimed to determine the prevalence of EBF and identify barriers to its practice. The findings revealed

that the prevalence of exclusive breastfeeding was only 49.7%. Several factors were significantly associated with this outcome at the 0.01 level.<sup>14</sup>

Additionally, a systematic review and meta-analysis of observational studies in Ethiopia estimated the prevalence of EBF and its correlation with maternal employment. After reviewing five years of published articles, a final analysis was conducted on 45 studies.

The overall prevalence of exclusive breastfeeding was found to be 60.42% (95% CI: 55.81, 65.02) at six months of age, with employed mothers being 57% less likely to practice EBF compared to unemployed mothers.<sup>14</sup>

The present study identified various barriers to EBF: inadequate breastmilk (42.5%), poor weight gain in infants (41.4%), medications taken by mothers (28.2%), latch issues (26.5%), health problems in the infant (22.7%), lack of knowledge (12.2%), the need to return to work (12.2%), time constraints (12.2%), and family pressure (12.2%). Additional barriers included breast issues (9.9%), concerns about future pregnancies (7.7%), and lack of partner support (5%).

These findings align with a study conducted in a rural community in India, which identified similar factors hindering EBF, including caesarean delivery (37.1%), perceived low milk supply (29.0%), ignorance about EBF (12.9%), and concerns regarding subsequent pregnancies (4.9%).<sup>15</sup>

The current study also examined the relationship between EBF and selected sociodemographic variables. Significant associations were found between EBF and exposure to pre-pregnancy education, place of residence, sources of breastfeeding information, number of antenatal visits, type of delivery, and initiation of breastfeeding. However, no significant associations were observed concerning age, occupation, family type, number of children, pregnancy status, infant gender, infant weight, infant age, or birth order. In this study, the majority of mothers (55.6%) had completed pre-university education, but no significant association was found between education level and exclusive breastfeeding (EBF). Similarly, 74.1% of mothers delivered in either nursing homes or private hospitals, which were considered together due to the similar nature of care provided in both settings in India. However,

no association was observed between the place of delivery and EBF rates.

A community-based cross-sectional study in the Gozamin district of Ethiopia assessed EBF prevalence and associated factors among 506 mothers and their infants. The prevalence rate was 74.1% (95% CI: 70.80, 79.10). Mothers who had not received pre-delivery counselling were 0.43 times less likely to practice EBF (AOR 0.43, 95% CI: 0.25, 0.72), while those who delivered in hospitals showed higher adherence to EBF.<sup>16</sup>

Similar results were found in a study in Nigeria aimed at identifying contributing factors to EBF. Using cluster sampling, 177 mothers from 11 political wards completed a questionnaire. While no significant association was found between EBF and maternal knowledge, a significant association was observed between EBF and place of residence ( $p = 0.001, < 0.05$ ).<sup>17</sup>

## Conclusions

The findings of this study underscore the need for regular breastfeeding education sessions in antenatal clinics and highlight the importance of midwives ensuring the immediate initiation of breastfeeding within the first hour post-delivery. Proper counselling is crucial to help mothers overcome barriers to exclusive breastfeeding.

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