

# Breastfeeding Knowledge, Attitudes and Practices among Postnatal Mothers: A Cross-Sectional Study from South India

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## Abstract

**Background:** Breastfeeding is one of the simplest yet most powerful interventions for improving child survival and maternal health. Although awareness of breastfeeding has increased substantially over recent decades, exclusive breastfeeding and optimal feeding practices continue to remain inconsistent in many parts of India. Maternal knowledge, family influence, cultural beliefs, and the quality of healthcare support all contribute to the initiation and sustainability of breastfeeding.

**Objectives:** To evaluate the knowledge, attitudes, and practices related to breastfeeding among postnatal mothers and assess their awareness regarding the Baby-Friendly Hospital Initiative (BFHI) in a tertiary care teaching hospital in South India.

**Methods:** A hospital-based cross-sectional observational study was conducted among 150 postnatal mothers with infants younger than six months of age. Information was collected using a structured, pre-validated questionnaire covering sociodemographic details, breastfeeding knowledge, attitudes, and practices. Data were analyzed using descriptive statistics and chi-square tests. Statistical significance was set at a p-value of  $< 0.05$ .

**Results:** The average age of the participating mothers was  $24.5 \pm 3.6$  years. Good breastfeeding knowledge was observed in 45.3% of the mothers, while 46.7% had moderate knowledge. Positive attitudes toward breastfeeding were noted in 78.0% of the participants. Good breastfeeding practices were documented in 89.3% of the mothers. Mothers who had received antenatal counselling had demonstrated significantly better knowledge scores than those who did not ( $p=0.001$ ). Positive maternal attitude was strongly associated with favorable breastfeeding practices ( $p<0.001$ ).

**Conclusion:** Most postnatal mothers demonstrated encouraging breastfeeding attitudes and practices; however, important knowledge gaps persisted. Strengthening antenatal education, improving lactation counselling services, and reinforcing BFHI implementation may help bridge these gaps and promote optimal breastfeeding behaviours.

**Keywords:** Breastfeeding, Baby-Friendly Hospital Initiative, Exclusive breastfeeding, KAP study, Postnatal mothers.

## Introduction

Breastfeeding is widely recognized as the biological norm for infant feeding and an essential foundation for healthy growth and development. Human milk provides complete nutrition during early infancy while simultaneously offering immunological protection against infections and several chronic illnesses later in life. Besides infant benefits, breastfeeding also contributes positively to maternal health by promoting

uterine involution, reducing postpartum bleeding, and lowering the long-term risks of breast and ovarian cancers.

The World Health Organisation (WHO) and UNICEF recommend initiation of breastfeeding within the first hour after birth, exclusive breastfeeding for the first six months of life, and continuation of breastfeeding along with complementary feeding up to two years of age or beyond is recommended<sup>[1,2]</sup>. Despite these

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recommendations, breastfeeding practices often fall short of global and national targets.

In India, the National Family Health Survey-5 (NFHS-5) reported improvements in breastfeeding indicators over the previous decades; however, gaps continue to exist in early initiation and sustained exclusive breastfeeding<sup>[3]</sup>. These variations are influenced by multiple factors including maternal education, mode of delivery, cultural traditions, family pressure, employment status, and availability of healthcare support.

To strengthen breastfeeding support within healthcare systems, WHO and UNICEF introduced the Baby-Friendly Hospital Initiative (BFHI), which encourages hospitals to adopt evidence-based breastfeeding policies through the "Ten Steps to Successful Breastfeeding." Although BFHI has shown substantial benefits in improving breastfeeding outcomes, its implementation remains uneven across institutions, especially in resource-constrained settings<sup>[4]</sup>.

A recurring challenge in breastfeeding research is the gap between awareness and actual practice. Many mothers understand that breastfeeding is beneficial but still face difficulties in initiating or continuing optimal feeding practices due to physical discomfort, social influences, misinformation, or inadequate counselling<sup>[5,6]</sup>.

Knowledge, Attitude and Practice (KAP) studies provide valuable insights into these gaps between attitudes on breastfeeding practices, providing locally relevant evidence to strengthen breastfeeding awareness and actual breastfeeding behaviour by examining not only what mothers know, but also how their perceptions and beliefs influence real-world practices. Such information is essential for designing practical interventions that improve breastfeeding outcomes and maternal confidence.

Although several studies have examined breastfeeding practices in India, limited data from South India have comprehensively assessed breastfeeding knowledge, attitudes, practices, and BFHI awareness among postnatal mothers. This study addresses this gap by evaluating breastfeeding-related KAP and BFHI awareness in a tertiary care teaching hospital in Karnataka. It also examines the influence of antenatal counselling and maternal promotion and BFHI implementation.

Therefore, the present study was designed with three primary objectives: (i) to assess the level of breastfeeding knowledge among postnatal mothers, (ii) to evaluate their attitude toward breastfeeding, and (iii) to document current breastfeeding practices and identify factors- including mode of delivery,

parity, education, and antenatal counselling- that are significantly associated with those practices.

## Methods:

### Study Design and Setting:

This cross-sectional observational study was conducted in the postnatal wards and paediatric outpatient department of S. Nijalingappa Medical College and HSK Hospital, Bagalkote, Karnataka, over a three-month period from February 2026 to April 2026.

### Study Participants:

Postnatal mothers with infants younger than six months who were willing to participate were included in the study. Mothers who could not breastfeed because of severe maternal or neonatal illness, and mothers unwilling to provide consent were excluded from the study.

### Sample Size:

The sample size was estimated assuming a 50% prevalence of optimal breastfeeding practices, with a 95% confidence level and 8% allowable error. Based on this calculation, a minimum sample size of 150 participants was determined. Consecutive eligible mothers were enrolled until the desired sample size was achieved.

### Data Collection Tool:

Data were collected using a structured and pre-tested questionnaire consisting of four sections:

1. **Sociodemographic Information:** The included variables were maternal age, education, occupation, parity, mode of delivery, birth weight, NICU admission status, and antenatal counselling regarding breastfeeding.
2. **Knowledge Assessment:** The knowledge section contained 13 questions related to initiation of breastfeeding, colostrum feeding, exclusive breastfeeding duration, demand feeding, BFHI awareness, infection prevention, and breastfeeding during maternal illness. Correct responses were scored as one and incorrect responses as zero. Scores were graded as follows: poor (0-4), moderate (5-8), and good (9-13).
3. **Attitude Assessment:** Attitudes toward breastfeeding were assessed using a nine-item Likert scale. Responses were coded as: agree=2, neutral=1, disagree=0, with reverse scoring for negative statements. The total scores ranged from 0-18; negative (0-6), neutral (7-12), positive (13-18).

4. **Practice Assessment:** Breastfeeding practices included the timing of initiation, use of prelacteal feeds, colostrum feeding, exclusive breastfeeding, feeding frequency, and breastfeeding difficulties. A composite Practice Score (0-5) was derived; scores 3-5 defined as 'Good Practice.'

#### Statistical Analysis:

Data were entered into Microsoft Excel and analyzed using SPSS version 22.0. Continuous variables were expressed as mean  $\pm$  standard deviation and categorical variables were expressed as frequencies and percentages. The associations between variables were assessed using the chi-square test. Statistical significance was set at  $p < 0.05$ .

#### Ethical Considerations:

Written informed consent was obtained from all participants prior to enrolment. Confidentiality and anonymity were maintained throughout the study period.

#### Results:

##### Sociodemographic Characteristics:

A total of 150 postnatal mothers participated in this study. The mean maternal age was  $24.5 \pm 3.6$  years old. Most mothers belonged to the 20-30 year age group. Secondary school education was the most common educational level. Homemakers constituted the majority of the participants. Slightly more than half of the mothers were primigravida, and vaginal delivery was more frequent than caesarean delivery. Nearly half of the mothers received antenatal counselling on breastfeeding (Table 1).

**Table 1: Sociodemographic characteristics of the study participants (n=150).**

| Variable           | n   | Percentage (%) |
|--------------------|-----|----------------|
| <b>Age (years)</b> |     |                |
| < 20               | 14  | 9.3            |
| 20-30              | 128 | 85.3           |
| > 30               | 8   | 5.3            |
| <b>Education</b>   |     |                |
| Illiterate         | 9   | 6.0            |
| Primary            | 43  | 28.7           |
| Secondary          | 66  | 44.0           |
| Graduate           | 32  | 21.3           |
| <b>Occupation</b>  |     |                |
| Homemaker          | 120 | 80.0           |
| Working            | 30  | 20.0           |
| <b>Parity</b>      |     |                |
| Primigravida       | 86  | 57.3           |
| Multigravida       | 64  | 42.7           |

|                                         |     |      |
|-----------------------------------------|-----|------|
| <b>Mode of Delivery</b>                 |     |      |
| Vaginal                                 | 81  | 54.0 |
| Caesarean                               | 69  | 46.0 |
| <b>NICU Admission</b>                   |     |      |
| Yes                                     | 25  | 16.7 |
| No                                      | 125 | 83.3 |
| <b>ANC Counselling on Breastfeeding</b> |     |      |
| Received                                | 70  | 46.7 |
| Not Received                            | 80  | 53.3 |

#### Knowledge of Breastfeeding:

Assessment of breastfeeding knowledge showed that nearly half of the participants had good knowledge scores, while a similar proportion had moderate knowledge. Only a small percentage had poor knowledge. Most mothers were aware of the importance of colostrum feeding and the early initiation of breastfeeding. Awareness of the duration of exclusive breastfeeding was also reasonably satisfactory. However, knowledge of continued breastfeeding beyond infancy and awareness of BFHI policies remained comparatively low (Table 2).

**Table 2: Distribution of breastfeeding knowledge scores among the study participants (n=150).**

| Knowledge Grade | Score Range | n   | Percentage (%) |
|-----------------|-------------|-----|----------------|
| Poor            | 0-4         | 12  | 8.0            |
| Moderate        | 5-8         | 70  | 46.7           |
| Good            | 9-13        | 68  | 45.3           |
| Total           |             | 150 | 100.0          |

#### Attitudes towards Breastfeeding:

The majority of participants expressed positive attitudes toward breastfeeding (Table 3). Most mothers strongly agreed that breast milk is the ideal food for infants and that breastfeeding strengthens maternal-infant bonding. Nevertheless, a small proportion of mothers reported discomfort with breastfeeding in public places or perceived breastfeeding as inconvenient. These concerns reflect the ongoing sociocultural influences that continue to affect maternal perceptions.

**Table 3: Distribution of breastfeeding attitude scores among the study participants (n=150).**

| Attitude Grade | Score Range | n   | Percentage (%) |
|----------------|-------------|-----|----------------|
| Negative       | 0-6         | 14  | 9.3            |
| Neutral        | 7-12        | 19  | 12.7           |
| Positive       | 13-18       | 117 | 78.0           |
| Total          |             | 150 | 100.0          |

### Breastfeeding Practices:

The breastfeeding practices among the participants were largely encouraging (Table 4). Most mothers reported early initiation within one hour after delivery. Colostrum feeding was widely practiced, and the majority avoided prelacteal feeds. Exclusive breastfeeding was practiced by nearly nine out of ten mothers at the time of the assessment. On-demand feeding was also commonly performed. Only a few mothers reported breastfeeding-related difficulties, such as poor latch, nipple pain, or perceived insufficient milk.

**Table 4: Breastfeeding practices of the study participants (n=150).**

| Practice Variable               | n   | Percentage (%) |
|---------------------------------|-----|----------------|
| <b>Breastfeeding Initiation</b> |     |                |
| < 1 hour (early initiation)     | 130 | 86.7           |
| 1-24 hours                      | 4   | 2.7            |
| > 24 hours                      | 16  | 10.7           |
| <b>Prelacteal Feeds Given</b>   |     |                |
| Yes                             | 16  | 10.7           |
| No                              | 134 | 89.3           |
| <b>Colostrum Feeding</b>        |     |                |
| Yes                             | 130 | 86.7           |
| No                              | 20  | 13.3           |
| <b>Exclusive Breastfeeding</b>  |     |                |
| Yes                             | 134 | 89.3           |
| No                              | 16  | 10.7           |
| <b>Feeding Frequency</b>        |     |                |
| On-demand                       | 130 | 86.7           |
| Scheduled                       | 20  | 13.3           |
| <b>Breastfeeding Difficulty</b> |     |                |
| Yes                             | 4   | 2.7            |
| No                              | 146 | 97.3           |
| <b>Composite Practice Grade</b> |     |                |
| Good Practice (score 3-5)       | 134 | 89.3           |
| Poor Practice (score 0-2)       | 16  | 10.7           |

### Association Between Variables:

A statistically significant association was observed between maternal attitudes and breastfeeding practices (Table 5). Mothers with positive attitudes were significantly more likely to demonstrate good breastfeeding practices. Similarly, antenatal counselling showed a strong positive association with breastfeeding knowledge. Mothers who received counselling during pregnancy demonstrated a better understanding of breastfeeding recommendations. No significant association was identified between breastfeeding practices and educational status, parity, or mode of delivery.

**Table 5: Association between maternal attitude and breastfeeding practices**

| Attitude Grade | Good Practice n (%) | Poor Practice n (%) | Total | p-value |
|----------------|---------------------|---------------------|-------|---------|
| Negative       | 8 (57.1%)           | 6 (42.9%)           | 14    |         |
| Neutral        | 16 (84.2%)          | 3 (15.8%)           | 19    |         |
| Positive       | 110 (94.0%)         | 7 (6.0%)            | 117   |         |
| Total          | 134 (89.3%)         | 16 (10.7%)          | 150   | <0.001* |

(chi-square=18.44; p<0.001). \*Statistically significant.

Mothers who received ANC counselling demonstrated significantly better knowledge scores than those who did not (chi-square = 13.12, p=0.001). Among the mothers who received counselling, 60.0% had good knowledge, compared to 32.5% who did not (Table 6).

**Table 6: Association between ANC counselling and breastfeeding knowledge**

| ANC Counselling     | Good Knowledge n (%) | Moderate Knowledge n (%) | Poor Knowledge n (%) | p-value |
|---------------------|----------------------|--------------------------|----------------------|---------|
| Received (n=70)     | 42 (60.0%)           | 26 (37.1%)               | 2 (2.9%)             |         |
| Not Received (n=80) | 26 (32.5%)           | 44 (55.0%)               | 10 (12.5%)           |         |
| Total (n=150)       | 68 (45.3%)           | 70 (46.7%)               | 12 (8.0%)            | 0.001*  |

(chi-square=13.12; p=0.001). \*Statistically significant.

No statistically significant association was found between the mode of delivery and breastfeeding practices (chi-square=2.78, p=0.096), education level and practices (chi-square=0.85, p=0.839), or parity and practices (chi-square=0.13, p=0.719). NICU admission did not significantly affect the practice outcomes (p=1.00) in this cohort.

### Discussion:

The study explored breastfeeding-related knowledge, attitudes, and practices among postnatal mothers attending a tertiary care hospital in South India. Overall, the findings demonstrate encouraging breastfeeding behaviour, although certain knowledge gaps and sociocultural barriers remain, revealing both encouraging strengths and persistent gaps that warrant targeted intervention.

In terms of knowledge, 45.3% of mothers demonstrated good knowledge, and a further 46.7% had moderate knowledge. These proportions are broadly consistent with those of studies conducted in similar tertiary care settings in India. Garg et al. reported adequate breastfeeding knowledge in approximately 50-60% of postnatal mothers in a North Indian hospital<sup>[7]</sup>, and comparable rates have been documented in studies



from Tamil Nadu and Karnataka<sup>[8,9]</sup>. Importantly, the present study found that the receipt of antenatal counselling was a highly significant determinant of knowledge level ( $p=0.001$ ), reinforcing the crucial role of structured prenatal education in translating general awareness into specific, actionable knowledge.

The attitude data were notably positive, with 78.0% of participants demonstrating a positive attitude toward breastfeeding. This is encouraging and suggests that the cultural and social environments in this region broadly support breastfeeding. However, a non-trivial 9.3% held negative attitudes, most commonly expressing discomfort with breastfeeding in public and perceiving it as inconvenient, findings that mirror sociocultural barriers reported elsewhere in India and globally<sup>[10,11]</sup>. These attitudinal barriers are particularly important because the present study identified attitude as the single most significant predictor of good breastfeeding practices ( $p<0.001$ ), underscoring that even when knowledge is adequate, negative or neutral attitudes can derail optimal behaviour.

The overall prevalence of good practices (89.3%) in this study was higher than in many previous reports, possibly reflecting the tertiary care hospital context, where lactation support services are comparatively more available. Early initiation within one hour of delivery, a cornerstone of BFHI's 'Ten Steps', was achieved in 86.7% of cases. This is higher than the national average of approximately 41.6% reported by the NFHS-5<sup>[3]</sup>, although this comparison must be interpreted cautiously, given the different study populations. Prelacteal feed administration, a practice explicitly discouraged by both the WHO and BFHI, was reported by 10.7% of mothers, highlighting a residual area for improvement.

The lack of significant association between the mode of delivery and breastfeeding practices in the present study ( $p=0.096$ ) differs from some previous reports that have highlighted caesarean section as a risk factor for delayed initiation and suboptimal EBF<sup>[12]</sup>. The comparatively high rates of early initiation, even among the mothers who delivered via caesarean section in our cohort, may reflect the improving intraoperative and postoperative lactation support within this institution.

The significant association between antenatal counselling and knowledge strongly argues for universal, structured breastfeeding education during the antenatal period. Equally, the powerful link between attitude and practice highlights the need for interventions that go beyond information provision to address sociocultural norms, family influences, and healthcare worker support that shape

maternal attitudes. Strengthening step-by-step BFHI implementation within maternity units remains a high-yield, evidence-based strategy for sustaining and improving the encouraging practice rates observed in this cohort.

#### **Limitations:**

This study had certain limitations. As this was a cross-sectional study, causal relationships could not be established. Information on breastfeeding practices was self-reported and may have been influenced by recall or social desirability bias. Additionally, the study was conducted at a single tertiary care centre, which may limit the generalizability to community settings.

#### **Conclusion:**

The present study demonstrated that most postnatal mothers possessed favourable attitudes and encouraging breastfeeding practices, although gaps in knowledge persisted among a subset of participants. Antenatal counselling significantly improved maternal knowledge, while a positive attitude strongly influenced successful breastfeeding practices.

These findings emphasise the need for comprehensive antenatal education, continuous lactation counselling, and the stronger implementation of Baby-Friendly Hospital Initiative principles within healthcare institutions. Addressing sociocultural barriers and improving maternal confidence may further enhance breastfeeding outcomes and contribute to better child health outcomes.

#### **Key Messages:**

- Breastfeeding knowledge among postnatal mothers was generally moderate to good, although certain misconceptions persisted.
- Positive maternal attitudes were strongly associated with better breastfeeding practices.
- Antenatal counselling plays an important role in improving breastfeeding knowledge.
- Strengthening BFHI implementation especially in smaller nursing homes, PHC's and CHC's, along with lactation support services may help sustain optimal breastfeeding behaviour.

#### **Recommendations:**

- Strengthen antenatal breastfeeding counselling to improve maternal knowledge and awareness.
- Enhance lactation support services during the antenatal and postnatal periods.
- Promote Baby-Friendly Hospital Initiative (BFHI) practices to support early initiation and exclusive breastfeeding.

- Conduct regular breastfeeding education programmes for mothers and family members to address misconceptions and sociocultural barriers.
- Further multicentric studies with larger sample sizes are recommended to improve the generalizability of findings.

#### Contributors:

Ramesh R Pol conceptualised the study and supervised the project. Bhuvaneshwari C Yelamali developed the questionnaire and performed statistical analysis. Archana DS and Anusha P participated in data collection and data entry. All authors contributed to the manuscript preparation and approved the final version.

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#### References:

1. World Health Organization. *Infant and young child feeding: model chapter for textbooks for medical students and allied health professionals*. Geneva: World Health Organization; 2009.
2. United Nations Children's Fund. *Baby-Friendly Hospital Initiative: revised, updated and expanded for integrated care*. New York: UNICEF; 2009.
3. International Institute for Population Sciences (IIPS), ICF. *National Family Health Survey (NFHS-5), 2019–21: India report*. Mumbai: IIPS; 2022.
4. Kramer MS, Kakuma R. *Optimal duration of exclusive breastfeeding*. *Cochrane Database Syst Rev*. 2012;(8):CD003517.
5. Agho KE, Dibley MJ, Odiase JI, Ogbonmwan SM. *Determinants of exclusive breastfeeding in Nigeria*. *BMC Pregnancy Childbirth*. 2011;11:2.
6. Agnihotri N, Puri A, Kaur J. *Breastfeeding practices and knowledge among postnatal women at a tertiary care hospital in Northern India*. *Indian J Community Med*. 2018;43(3):178-181.
7. Garg R, Singh D, Padda A, Singh T. *Breastfeeding knowledge and practices among rural women of Punjab, India: a community-based study*. *Breastfeed Med*. 2010;5(6):303-307.
8. Raghunath V, Venkatesha Murthy NK, Mohanraj MP, Kalmanje M. *Breastfeeding practices among urban mothers in South India: a cross-sectional study*. *J Clin Diagn Res*. 2015;9(1):SC01-SC04.
9. Nagpal J, Narang A, Bhargava B. *Breastfeeding practices in a low-income urban setting in South Delhi: a hospital-based study*. *Indian Pediatr*. 2004;41(10):1015-1019.
10. Otsuka K, Dennis CL, Tatsuoka H, Jimba M. *The relationship between breastfeeding self-efficacy and perceived insufficient milk among Japanese mothers*. *J Obstet Gynecol Neonatal Nurs*. 2008;37(5):546-555.
11. Tarrant M, Dodgson JE, Tsang SF. *Initiating and sustaining breastfeeding in a society with a low prevalence of breastfeeding: the case of Hong Kong*. *Midwifery*. 2002;18(3):238-245.
12. Prior E, Santhakumaran S, Gale C, Philipps LH, Modi N, Hyde MJ. *Breastfeeding after cesarean delivery: a systematic review and meta-analysis of world literature*. *Am J Clin Nutr*. 2012;95(5):1113-1135.

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