RESEARCH PAPER

Assessing Paternal Knowledge and Attitudes Toward Supporting Exclusive Breastfeeding in a Suburban Community in India

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ABSTRACT

Background:Breastfeeding is essential for infant health, offering critical nutritional and immunological benefits. However, in suburban Indian settings, paternal roles in breastfeeding support remain poorly understood despite increasing global recognition of their importance.

Objective:To evaluate the knowledge, attitudes, and involvement of fathers in supporting breastfeeding in suburban communities of Chengalpattu district, Tamil Nadu.

Methods:A cross-sectional study was conducted among 130 eligible fathers of infants aged 6–12 months using a structured, interview-based questionnaire. The survey assessed paternal attitudes, breastfeeding knowledge, and participation in support practices.

Results: The majority of fathers demonstrated positive engagement across key breastfeeding domains, with highest agreement in perinatal care (86.9%), rooming-in (86.9%), and responsive feeding (83.1%). Moderate support was noted for antenatal involvement (65.4%) and breastfeeding assistance (63.8%). Higher education and first-time fatherhood were significantly associated with stronger support ($p < 0.05$). ROC analysis indicated limited predictive accuracy (AUC = 0.46), suggesting that positive attitudes did not always translate into supportive behaviours.

Conclusion:Although fathers demonstrated positive attitudes toward breastfeeding, a gap remains between awareness and active involvement. Strengthening father-focused education through prenatal counselling and community outreach is vital to enhance breastfeeding outcomes in suburban India.

Keywords: infant nutrition, breastfeeding, paternal support, suburban India, public health, attitudes, knowledge

How to cite this article: Shamsuddin RF, Mugunthan SR, Chinnasami B, Sundar S. Assessing Paternal Knowledge and Attitudes Toward Supporting Exclusive Breastfeeding in a Suburban Community in India. Int J Drug Deliv Technol. 2026;16(6s): 609-614; DOI: 10.25258/ijddt.16.6s.86

Source of support: Nil.

Conflict of interest: None

INTRODUCTION

Breastfeeding is universally considered as the best source of newborn nourishment, providing significant health benefits to both infants and mothers. The World Health Organization (WHO) and UNICEF's recommend exclusive breastfeeding (EBF) for the first six months of life, followed by continued breastfeeding with complementary foods for two years or longer [1]. This is corroborated by data that links EBF to lower newborn morbidity and mortality, improved cognitive development, and lower risk of chronic disorders later in life [2-5]. Breastfeeding lowers the risk of breast and ovarian cancer for mothers, as well as type 2 diabetes and postpartum depression.[5]

The WHO/UNICEF Baby-Friendly Hospital Initiative (BFHI) promotes EBF through the Ten Steps to Successful Breastfeeding, which include staff training, early initiation, rooming-in, and post-discharge support.[1,6] While these steps primarily target mothers, emerging evidence highlights the critical role of fathers in influencing breastfeeding practices.[7-10] In recent years, fathers have transitioned from traditional breadwinners to active co-parents, especially in urban and suburban areas, forming a

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triadic family unit that includes fathers in breastfeeding decision-making.[11-14]

Fathers support breastfeeding through emotional encouragement, sharing household duties, and promoting positive attitudes [15,16]. Their involvement enhances maternal confidence and self-efficacy, key factors in sustaining breastfeeding, especially during periods of maternal fatigue or doubt [17,18]. Studies from Italy, Vietnam, Thailand, Bangladesh, and India consistently show that paternal knowledge and support are positively correlated with EBF outcomes [13,17-20]. In India, findings from states like Odisha, Karnataka, and Tamil Nadu affirm the importance of paternal roles. Researchers such as Nasution et al. and Pereira et al. have advocated for integrating paternal education into national breastfeeding strategies [16,19,20].

Despite this, structured efforts to engage fathers remain limited in patriarchal societies like India, where men often make health-related decisions. Cultural norms, lack of paternity leave, and limited male-targeted health education are persistent barriers [11,21-23]. Innovative approaches, including attitudinal scoring and behavioural assessments, show promise, though they require validation through maternal feedback or longitudinal tracking [24-25].

Given the evolving cultural dynamics in suburban India, this study aims to assess paternal knowledge, attitudes, and involvement in EBF and explore their relationship to breastfeeding outcomes during the infant's first six months.

MATERIALS AND METHODS:

2.1 Design and settings:

This facility-based cross-sectional study was conducted in the Paediatric Outpatient Department of our tertiary care hospital, a referral centre for infant care. Data collection was carried out over an eight-month period, from November 2024 to June 2025.

2.2 Sample Size:

A cross-sectional study was conducted in suburban areas of Chengalpattu district, Tamil Nadu. Of the 200 fathers approached, 50 did not meet eligibility criteria and 20 declined participation due to lack of time or interest. Therefore, 130 fathers were included in the final analysis. The required sample size was 120, calculated using *nMaster* software (version 2.0) with 2.5% precision and 95% confidence interval. Eligible participants were fathers of healthy, term infants aged 6–12 months with uneventful neonatal histories. Exclusions included preterm or low birth weight infants, twins, known health conditions, maternal complications, or infants not residing with the mother during the first six months.

2.3 Data collection and procedure:

This study was conducted in accordance with established ethical standards and posed no anticipated risk to participants. Participation was completely voluntary, and all respondents provided informed consent prior to data collection. All information obtained during the study was treated with strict confidentiality and used solely for research purposes.

A structured, interviewer-administered questionnaire developed in Google Forms was used for data collection. Each face-to-face interview lasted about 10 minutes and was conducted by the same trained healthcare professional. Fathers rated their agreement on a 5-point Likert scale, later categorized as agree, neutral, or disagree. Responses were recorded electronically on a tablet, exported to Excel, and verified by a second researcher for accuracy, ensuring data completeness and reliability before statistical analysis. The Google Form was password-protected, and access to the response sheet was restricted to the research team to ensure data confidentiality.

2.4 Study Instruments

The structured, interview-based questionnaire used in this study was developed and validated by a multidisciplinary panel comprising neonatologists, paediatricians, paediatric nurses, and obstetricians. The content of the questionnaire was designed to align with the WHO/UNICEF "Ten Steps to Successful Breastfeeding" and was adapted with reference to validated tools, including one published in the *European Journal of Paediatrics*.

The questionnaire consisted of 10 sections for fathers; they were asked to rate their level of agreement with each item on a 5-point Likert scale (ranging from Agree to *Disagree*). The first section collected basic demographic and background characteristics of the study population. The remaining sections corresponded to specific steps of the WHO/UNICEF framework as follows:

Section 2: Antenatal care (*Step 3*)
Section 3: Perinatal care (*Step 4*)
Section 4: Breastfeeding support (*Step 5*)
Section 5: Rooming-in practices (*Step 7*)
Section 6: Responsive feeding (*Step 8*)
Section 7: Use of pacifiers and artificial teats (*Step 9*)
Section 8: Staff competency and information received at discharge (*Steps 2 and 10*)
Sections 9 and 10: Fathers' perspectives on the impact of breastfeeding on daily life and public breastfeeding

The questionnaire was pilot-tested for clarity and relevance before full-scale administration. To maintain privacy and promote honest responses, fathers were interviewed individually, and their responses were not shared with their partners or other family members.

2.5 Statistical analysis:

Data were entered in Microsoft Excel 2016 and analyzed using IBM SPSS Statistics v26. Categorical variables were summarized as frequencies and percentages, while continuous variables were described using means and standard deviations. Associations between categorical variables were tested using Chi-square or Fisher's exact tests, with $p < 0.05$ considered significant. The Receiver Operating Characteristic (ROC) curve was generated by plotting the true positive rate (sensitivity) against the false positive rate (1-specificity) at various thresholds. The area under the curve (AUC) was computed to evaluate the discriminatory ability of paternal attitude scores in identifying supportive behaviour.

RESULTS:

3.1 Sociodemographic Characteristics of Participants

A total of 130 fathers participated. The mean paternal age was 31.6 years, with 60.8% aged 30 years or older. Over half (55.4%) had more than 12 years of education, and most participants (75.4%) were first-time fathers. Approximately two-thirds (65.4%) of infants were exclusively breastfed at discharge (Table 1).

3.2 Association Between Sociodemographic Factors and Paternal Support

Educational attainment showed a significant association with paternal support for exclusive breastfeeding ($p = 0.041$), with fathers having more than 12 years of education demonstrating higher support scores. A similar trend was observed among mothers with higher educational levels ($p = 0.026$). First-time fathers exhibited significantly greater support for EBF compared to those with multiple children ($p = 0.017$). In contrast, paternal age and type of delivery were not significantly associated with breastfeeding support ($p = 0.214$ and $p = 0.274$, respectively). Feeding method at discharge was a strong predictor, as fathers of exclusively breastfed infants reported higher support scores than those practicing mixed or bottle feeding ($p < 0.001$) (Table 1).

Table 1: Sociodemographic characteristics

Sociodemographic Characteristics	Categories	Frequency (n)	Percentage (%)	p-value
Father Age	< 30 years	51	39.2	0.214
	≥ 30 years	79	60.8	
Father's Education	≤ 12 years	58	44.6	**0.041***
	> 12 years	72	55.4	
Mother's Education	≤ 12 years	64	49.2	**0.026***
	> 12 years	66	50.8	
Number of Children	1	98	75.4	**0.017***
	2	28	21.5	
	≥ 3	4	3.1	
Type of Delivery	Spontaneous	73	56.2	0.274
	Caesarean	55	42.3	
Feeding at Discharge	Exclusive breastfeeding	85	65.4	**< 0.001***
	Mixed feeding	34	26.2	
	Bottle feeding	8	6.2	

P value <0.05*, indicates statistical significance

Table 2: Paternal Support and Behaviour

Category	Agree	Disagree	Neutral
Antenatal Care	85 (65.4%)	21 (16.2%)	24 (18.5%)
Perinatal Care	113 (86.9%)	13 (10.0%)	4 (3.1%)
Breastfeeding Support	83 (63.8%)	23 (17.7%)	24 (18.5%)
Rooming-in	113 (86.9%)	11 (8.5%)	6 (4.6%)
Responsive Feeding	108 (83.1%)	9 (6.9%)	13 (10.0%)
Pacifier Use	104 (80.0%)	12 (9.2%)	14 (10.8%)
Staff Competency and Discharge Information	100 (76.9%)	18 (13.8%)	12 (9.2%)
Perceived Practicality	81 (62.3%)	26 (20.0%)	23 (17.7%)
Perceived Social Acceptability	92 (70.8%)	26 (20.0%)	12 (9.2%)

values are expressed in frequency; Responses were based on paternal response using a structured questionnaire.

Paternal attitudes toward breastfeeding, assessed across nine domains aligned with the WHO/UNICEF Ten Steps to Successful Breastfeeding, revealed overall positive perceptions, particularly in perinatal involvement (86.9%), rooming-in (86.9%), and responsive feeding (83.1%). Most fathers acknowledged their roles in antenatal care (65.4%) and breastfeeding support (63.8%), though neutrality or disagreement in some domains indicates areas for further engagement. While pacifier avoidance was supported by 80%, varied responses point to cultural or informational gaps. Practicality (62.3%) and social acceptability (70.8%) received moderate endorsement, indicating persistent societal barriers. High agreement on staff competency and discharge information (76.9%) underscores the impact of institutional support. These findings highlight growing paternal awareness but also emphasize the need for targeted education and policy interventions to strengthen father-inclusive breastfeeding practices.

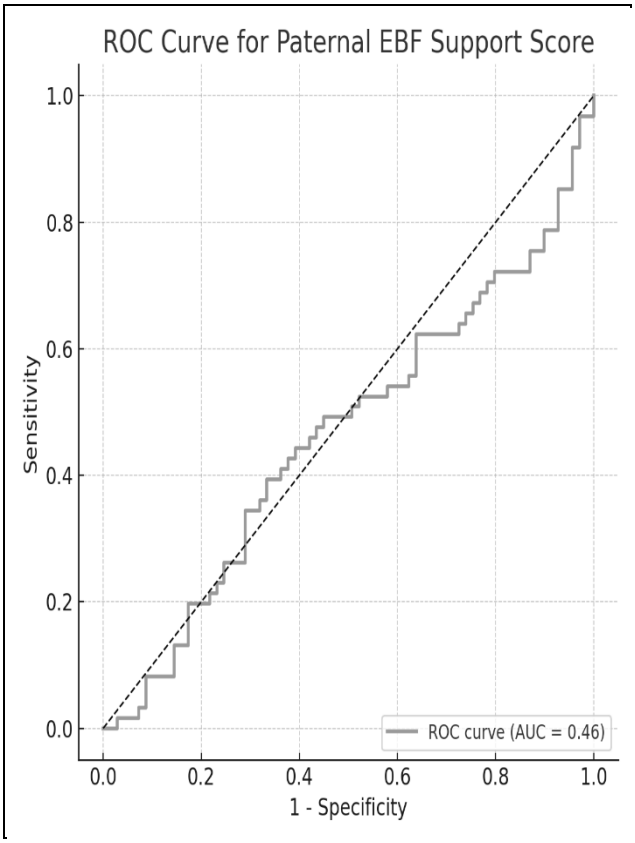

Fig 1: Receiver operating characteristic (ROC) curve for Paternal EBF Support

3.3 Paternal Attitude Scoring and Predictive Analysis

To quantify paternal attitudes toward exclusive breastfeeding (EBF), a composite score was generated using participant responses to Likert-scale items mapped to the WHO/UNICEF "Ten Steps to Successful Breastfeeding." Domains included antenatal knowledge, skin to skin contact, rooming-in, responsive feeding, pacifier avoidance, and perceived social acceptability. Each item was graded on a 5-point scale, and each of the scores were added to generate a total paternal attitude score, with higher scores reflecting less favourable breastfeeding attitudes.

The total attitude score was evaluated as a predictive variable using Analyse the ROC curve of the receiver in order to determine the bias capacity for identifying supportive paternal behaviour. The resulting area under the curve (AUC) was 0.46 ($p = 0.430$; 95% CI: 0.350–0.570) (fig.1) indicating a limited and statistically non-significant ability of the composite attitude score to distinguish between supportive and non-supportive fathers. The low discriminative power may reflect a ceiling effect, as most participants reported uniformly favourable responses, reducing score variability.

4 DISCUSSION

This study highlights the pivotal role of fathers in promoting and sustaining exclusive breastfeeding within suburban communities of Tamil Nadu. The majority of fathers demonstrated positive attitudes and active participation in supportive practices, particularly in perinatal care, rooming-in, and responsive feeding. These findings mirror global and regional trends that underscore growing paternal involvement in infant nutrition and caregiving [5,6,19].

The high proportion of fathers endorsing perinatal and postnatal engagement reflects increasing awareness of their role in early infant care. However, moderate agreement in antenatal participation (65.4%) and breastfeeding assistance (63.8%) suggests persistent barriers in the prenatal phase. This gap may stem from limited father-centered health education and traditional perceptions that breastfeeding is solely a maternal responsibility [11,21–23]. Strengthening prenatal inclusion through structured counselling could bridge this divide.

Consistent with studies from Vietnam [13] and Thailand [25], higher educational attainment was associated with more favourable attitudes and active support. Fathers with better education may have greater access to health information and be more receptive to public health messaging. Crippa et al. (2021) similarly emphasised the evolving transition from a mother–child dyad to a triadic model of breastfeeding involving both parents [5].

Despite the overall positive findings, the study's ROC analysis revealed limited predictive accuracy (AUC = 0.46), indicating that favorable attitudes did not always translate into corresponding supportive behaviors. This discrepancy highlights the need for more nuanced assessment tools that integrate behavioral, social, and cultural components. Comparable observations were reported by Ouyang and Nasrin (2021), who recommended complementing paternal self-assessments with maternal perspectives for a more comprehensive understanding [21], and Wolfberg et al. (2004), where targeted education improved active paternal support [8,17].

5 CONCLUSION

This study substantiates that paternal knowledge, attitude, and supportive behaviours markedly influence exclusive breastfeeding outcomes. Elevated educational attainment and occupational stability serve as strong predictors of positive paternal engagement. To transition from intention to tangible impact, antenatal and postnatal education programs should encompass fathers, and policies must be formulated to support paternal participation. With substantial involvement, the breastfeeding triad can develop into a fundamental element of child health promotion

6 LIMITATIONS AND RECOMMENDATIONS

This study relied on self-reported data, which may be influenced by social desirability bias. Its cross-sectional design limits causal interpretation, and the single-center sample may restrict generalizability. Cultural norms, work constraints, and limited paternal leave could also have reduced father involvement.

Potential confounders such as maternal employment, socioeconomic status, and exposure to counselling were not controlled for. Larger, multi-center studies using multivariate analyses are recommended to address these factors.

Despite these limitations, the findings provide useful insights for developing father-inclusive breastfeeding interventions. Incorporating paternal education into maternal health programs and national initiatives such as RMNCH+A, ICDS, and Poshan Abhiyaan can enhance engagement. Involving ASHA, Anganwadi, and male peer groups in community counselling may further strengthen paternal support for breastfeeding.

Acknowledgement: I would like to express my sincere gratitude to my supervisors, mentors and department of paediatrics for their support.

Declarations:

Ethical Approval: Obtained from institutional ethical committee

Consent to Participate: Written informed consent was obtained from all participants prior to data collection. Participation was voluntary, and confidentiality of responses was ensured.

Consent to publish: The author gives full consent to publish the manuscript (including text, tables and figures) in discover public health

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