

A Retrospective Analysis of Breastfeeding Practices in a Pediatric Population, Including Rates, Duration, and Associated Factors

Gaurav Kumar Sharma¹, Vaibhav², Sanjeev Kumar³, Dhananjay Kumar⁴, Vijay Deep⁵

¹Senior Resident, Dept. of Paediatrics, Bhagwan Mahavir Institute of Medical Sciences, Pawapuri, Nalanda, Bihar, India

²Senior Resident, Dept. of Paediatrics, Bhagwan Mahavir Institute of Medical Sciences, Pawapuri, Nalanda, Bihar, India

³Professor, Dept. of Paediatrics, Bhagwan Mahavir Institute of Medical Sciences, Pawapuri, Nalanda, Bihar, India

⁴Associate Professor, Dept. of Paediatrics, Bhagwan Mahavir Institute of Medical Sciences, Pawapuri, Nalanda, Bihar, India

⁵Associate Professor, Dept. of Paediatrics, Bhagwan Mahavir Institute of Medical Sciences, Pawapuri, Nalanda, Bihar, India

Received: 01-02-2026 / Revised: 15-03-2026 / Accepted: 21-04-2026

Corresponding author: Dr. Vaibhav

Conflict of interest: Nil

Abstract

Background: Breastfeeding is a key element of infant nutrition and plays a determinant role in improving child health and survival. Exclusive breastfeeding during the first six months of life is strongly recommended by the World Health Organization (WHO); however, breastfeeding practices are influenced by multiple social, cultural, and maternal factors.

Methods: The study was a retrospective observational study conducted in the Department of Pediatrics, BMIMS, Pawapuri, during the period of June 2025 to February 2026. A total of 1200 participants were included in the study. Hospital records were used to collect data, and a structured questionnaire was used in interviews with caregivers. Descriptive statistics and Chi-square tests were used to analyze the variables of exclusive breastfeeding, duration of breastfeeding, timing of initiation, complementary feeding practices and maternal factors.

Results: The study identified early initiation of breastfeeding within the one-hour period after birth in 68.2% of the infants. 54.8% of infants were exclusively breastfed for the first six months of life and 32.5% were mixed fed. The mean period of exclusive breast-feeding was 5.4 months. Maternal education, delivery type, occupation and socioeconomic status were significantly associated with exclusive breastfeeding. Mothers who were better educated and had normal delivery showed good breastfeeding practices.

Conclusion: The study highlights the importance of maternal education and counseling in the hospital setting to encourage optimal breastfeeding practices. Breastfeeding awareness programs possibly could enhance health-related outcomes in the study population if strengthened.

Keywords: Breastfeeding, Exclusive breastfeeding, Pediatric population, Infant nutrition, maternal factors, Retrospective study.

DOI: 10.25258/ijcpr.18.5.185

This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.

Introduction

Breastfeeding is observed as one of the most effective and economical methods of giving the infant the optimum nutrition in the early stages of life. Human breast milk is a source of many important nutrients, antibodies, enzymes and hormones which play an important role in the healthy growth and development of children [1,2]. Exclusive breastfeeding is a key protective measure for the health of babies as it decreases their risk of morbidity and mortality from infections like

diarrhoea, pneumonia and other communicable diseases, during the first six months of life [3]. Breastfeeding offers several benefits to mothers besides their infant, such as a lower risk of breast and ovarian cancer, improved postpartum recovery, and strengthening the emotional bond between mother and child [4]. The WHO has recommended initiation of breastfeeding within one hour of birth, and that they be exclusively breastfeeding for the first six months of their lives, after which they

should be breastfeeding and given complementary foods until they are two years old or older [5,6]. However, there are significant differences across populations in the rates of breastfeeding as a result of social, cultural, educational and economic factors. Although there have been improvements in the practice of breastfeeding in recent years, [7] there are also challenges to overcome, such as delayed initiation and early discontinuation of breastfeeding, and mixed feeding practices in many areas of India, especially in rural and semi-urban communities [8].

Breastfeeding evaluation in children is so important because infant feeding behaviors have direct consequences on child growth, nutrition, immunity and future health consequences. Poor breastfeeding practices could contribute to malnourishment, frequent infections, poor development and the burden of health services [9,10]. The identification of barriers to optimal infant feeding practices can be aided by understanding the rates and duration of breastfeeding and related maternal and demographic factors. Retrospective analysis of trends in breastfeeding also helps assess the impact of current maternal and child health services and help identify specific interventions to improve infant nutrition [11,12].

The present study is significant in the background of BMIMS, Pawapuri, Nalanda, where limited institutional information is available about breastfeeding practices among pediatrics patients. BMIMS serves the population of both the rural and semi-urban areas as well as people of various socio-economic and educational backgrounds. Research on breastfeeding behaviour in this context will yield important regional data on breastfeeding rates, lengths and factors influencing breastfeeding. The results of this research can help create effective awareness programmes, counseling techniques and healthcare strategies to support exclusive and prolonged breastfeeding between local communities.

Objectives

- To measure the prevalence and duration of breastfeeding in children.
- To determine the factors associated with exclusive breastfeeding.
- To assess the effect of maternal and demographic factors on the duration of breastfeeding.
- To evaluate the typical reasons for early cessation.

Materials and Methods

Study Design: The present study was conducted as a retrospective study to assess the breastfeeding practices in pediatric patients attending the Department of Pediatrics. The purpose of the study was to examine breastfeeding prevalence, duration and related maternal and demographic factors, based

on the records available with the caregiver respondents.

Study Setting: The study was carried out in the Department of Pediatrics at BMIMS, Pawapuri, and Nalanda. The institution serves a large pediatrics population from both the rural and semi-urban populations, making it a suitable setting for evaluation of infant feeding practices in the region.

Study Duration: The study was conducted over a period extending from June 2025 to February 2026. Retrospective data on breastfeeding practices were gathered and analysed during this time period.

Study Population: Children who were attending the pediatric Outpatient Department (OPD) and Inpatient Department (IPD), along with their mothers or primary caregivers, formed the study population. The participants consisted of people from different socio-economic and educational backgrounds in the surrounding areas of the Nalanda district.

Sample Size: A total of approximately 1200 children who had eligible records and were willing to have their caregiver complete the required information were included in the study.

Inclusion Criteria: Study participants were children ages 0-24 months with available breastfeeding records or a reliable breastfeeding history. The mothers or caregivers who were willing to provide the information needed about infant feeding practices were also eligible for participation.

Exclusion Criteria: Those with records that were incomplete medically or for feeding were excluded from the study. Children with serious congenital anomalies or with medical conditions that impact feeding practices were not included. Cases in which parents or caregivers refused to provide information were also excluded from the analysis.

Data Collection Procedure: Retrospective data were obtained by reviewing hospital records and by using a predesigned questionnaire, which was used to interview mothers or caregivers.

Breastfeeding information, such as exclusive breastfeeding, breastfeeding duration, breastfeeding initiation time after birth, and the introduction of complementary feeding, was systematically recorded along with maternal characteristics. Other maternal data, including age, educational level, occupation, and obstetric history, were also documented in further analysis.

Variables Studied: The dependent variables in the study included breastfeeding status and duration of breastfeeding. Some of the independent variables were maternal age, education, occupation, mode of delivery, child's birth order, and socioeconomic status. These variables were examined to determine

their association with breastfeeding practices among the study population.

Statistical Analysis: The data obtained were entered and organized in Microsoft Excel and then analyzed by SPSS software. Data were summarized using descriptive statistical methods, including frequencies, percentages, means and standard deviations.

The Chi-square test was used to determine the associations between breastfeeding practices and associated variables. A p-value of < 0.05 was taken to be statistically significant.

Ethical Considerations: The study was approved by the Institutional Ethical Committee of the Institute of Medical Sciences. The confidentiality and privacy of the participant information were respected throughout the study. As the study was retrospective, all the collected data were

anonymised and utilized only for academic and research purposes.

Results

Demographic Characteristics: A total of 1200 children were retrospectively reviewed from department of pediatrics BMIMS from June 2025 to February 2026. The majority of infants belonged to the age group of 6–12 months (35.0%), followed by 0–6 months (30.0%), 12–18 months (20.0%), and 18–24 months (15.0%). There was a preponderance of male children (52.5%) with females making up 47.5%.

Regarding maternal education, 33.3% of the mothers had secondary education, 25.0% had primary education, 20.8% had attained graduates, 12.5% were illiterate and 8.4% had post graduates' education. The majority of the mothers were homemakers and a large percentage were in the middle and lower socio-economic groups.

Table 1: Demographic Profile of Study Participants

Variable	Category	Frequency (n)	Percentage (%)
Age of Child	0–6 months	360	30.0
	6–12 months	420	35.0
	12–18 months	240	20.0
	18–24 months	180	15.0
Gender	Male	630	52.5
	Female	570	47.5
Maternal Education	Illiterate	150	12.5
	Primary School	300	25.0
	Secondary School	400	33.3
	Graduate	250	20.8
	Postgraduate	100	8.4

Breastfeeding Rates: Among the 1,200 children included in the study, only 68.2% of children were breastfed within one hour of birth. 54.8% of babies were exclusively breastfed for the first 6 months and 32.5% had a mixed feeding pattern. The use of formula alone was less frequent, accounting for

12.7% of infants. Findings showed that although breastfeeding initiation rates were relatively satisfactory, the prevalence of exclusive breastfeeding decreased because of the use of other foods before six months of age.

Table 2: Breastfeeding Practices among Study Participants

Breastfeeding Practice	Frequency (n)	Percentage (%)
Early initiation within 1 hour	818	68.2
Delayed initiation	382	31.8
Exclusive breastfeeding (0–6 months)	658	54.8
Mixed feeding	390	32.5
Formula feeding only	152	12.7

Duration of Breastfeeding: The mean duration of exclusive breastfeeding in the study was 5.4 ± 1.8 months. Among the infants, 78.5% continued to be breastfed at 6 months, and 46.2% continued to be breastfed at 12 months. Only 18.5% of children were breastfed for older than 18 months. As children grew older, breastfeeding rates slowly decreased, signifying that many mothers stopped breastfeeding early.

Table 3: Duration of Breastfeeding

Duration Indicator	Frequency (n)	Percentage (%)
Breastfeeding continued at 6 months	942	78.5
Breastfeeding continued at 12 months	554	46.2
Breastfeeding continued beyond 18 months	222	18.5
Mean duration of exclusive breastfeeding	5.4 ± 1.8 months	—

Associated Factors: Maternal education, mode of delivery, occupation and socioeconomic status were found to be significant factors for exclusive breastfeeding. Well-educated mothers showed more compliance with exclusive breastfeeding guidelines than the illiterate mothers. Normal vaginal delivery was associated with higher rates of early

breastfeeding initiation than cesarean section delivery.

Many mothers who were homemakers were exclusively breastfeeding than working mothers. Furthermore, the breastfeeding rates of families in middle socioeconomic status compared with lower socioeconomic status were relatively high.

Table 4: Factors Associated with Exclusive Breastfeeding

Variable	Category	Exclusive Breastfeeding (%)	p-value
Maternal Education	Illiterate	38.0	<0.05
	Secondary/Graduate	63.0	
Type of Delivery	Normal Vaginal Delivery	61.5	<0.05
	Cesarean Section	45.2	
Maternal Occupation	Homemaker	59.8	<0.05
	Employed	41.7	
Socioeconomic Status	Middle Class	60.4	<0.05
	Lower Class	43.5	

Discussion

This retrospective study of 1200 children of BMIMS found some significant observations concerning the initiation, duration of breastfeeding and associated maternal factors. The study found that 68.2% of the babies began breastfeeding within one hour of their birth, and 54.8% of the babies were exclusively breastfed for the first six months. These findings are consistent with the national data recorded in the National Family Health Survey (NFHS-5) where exclusive breastfeeding in India was recorded at around 63%. Nevertheless, the prevalence of this study is still less than the targets set by WHO which shows that breastfeeding promotion programs need to be strengthened.

The mean duration of exclusive breastfeeding in this study was 5.4 months, indicating that many mothers started complementary feeding before the recommended 6-month period. Changes in breastfeeding practices with child age were also noted as the proportion of children continuing to breastfeed decreased continuation beyond 12 months.

Comparison with Previous Studies

The results of the present study are similar to some of the earlier Indian and international studies which gave moderate exclusive breastfeeding rates and found that maternal education and mode of delivery were important factors. Similarly, in tertiary care hospitals, mothers who are more educated are more likely to practice exclusive breastfeeding because of the awareness of the importance of infant nutrition and health benefits [13].

As in previous studies, the current study found that women who had a normal vaginal delivery had a higher rate of breastfeeding initiation than women who had cesarean section deliveries. This may be related to the delay in maternal recovery and

temporary separation of mother and infant after surgical delivery. The exclusive breastfeeding rate however was slightly lower than some urban studies reported, which may be attributable to different literacy level, socio-economic status and health care accessibility in the rural communities [14,15].

Possible Explanations: There may be several reasons for the breastfeeding practices that were observed in the study population. The early introduction of water, animal milk or complementary feeding may be due to cultural beliefs and traditional feeding practices of the rural population.

Maternal knowledge also has a significant effect on the feeding behavior. Maternal awareness of the advantages of exclusive breastfeeding is also key in deciding the feeding behavior. Breastfeeding success is greatly affected by institutional support and counselling. Mothers who are counselled during and after pregnancy are more likely to initiate and maintain breastfeeding. Occupational obligations and lack of awareness programmes, and poor lactation counselling, were possible factors affecting exclusive breastfeeding in certain cases.

Clinical Implications: Based on the results of this study highlight the importance of strengthening breastfeeding counselling in pediatric and obstetric health care. Continuous training of health care practitioners on the advantages of exclusive breastfeeding during antenatal visits, delivery, and immunization follow-ups. Structured pediatric follow-up care and lactation support programs could contribute to breastfeeding persistence and to avoiding early breastfeeding cessation.

Strengths of the Study: The study's key strength is its relatively large number of pediatric records (1,200), which enhances the reliability and generalizability of the findings can be applied to the institutional setting. Further, information gained

from the use of retrospective hospital data gave useful insights into the actual breastfeeding practices in the Nalanda region.

Limitations: The retrospective design was reliant on the accuracy and completeness of hospital records, with some hospital files lacking information on breastfeeding. The study also took place in a single tertiary healthcare unit, and results can be generalizable to other geographic areas or healthcare units. Moreover, some other psychosocial factors related to breastfeeding were not evaluated because of the retrospective data collection method.

Conclusion

The present retrospective study showed that although the pediatric population at Bhagwan Mahavir Institute of Medical Sciences had relatively good breastfeeding initiation rate, the prevalence and duration of exclusive breastfeeding remained below recommended standards. Education of the mother, mode of delivery, occupation and socioeconomic status were identified as being important factors in the practice of breastfeeding.

The results underline the need to strengthen maternal awareness and programs of support for breastfeeding in the institutions to improve infant nutrition and child health outcomes.

Recommendations

Healthcare institutions should strengthen antenatal and postnatal breastfeeding counseling and make the public aware of exclusive breastfeeding for the first six months. Lactation support programs and regular pediatrics follow up programs should be established especially for mothers undergoing cesarean delivery and working mothers. Additional, multi-center, prospective research is recommended to better knowledge of the regional breastfeeding patterns and associated determinants.

References

- B. T. Woldeamanuel, "Trends and factors associated to early initiation of breastfeeding, exclusive breastfeeding and duration of breastfeeding in Ethiopia: Evidence from the Ethiopia Demographic and Health Survey 2016," *International Breastfeeding Journal*, vol. 15, no. 1, p. 3, 2020.
- S. Arif, H. Khan, M. Aslam, and M. Farooq, "Factors influencing exclusive breastfeeding duration in Pakistan: A population-based cross-sectional study," *BMC Public Health*, vol. 21, no. 1, p. 1998, 2021.
- D. D. Jebena and M. W. Tenagashaw, "Breastfeeding practice and factors associated with exclusive breastfeeding among mothers in Horro District, Ethiopia: A community-based cross-sectional study," *PLOS ONE*, vol. 17, no. 4, p. e0267269, 2022.
- K. E. Agho et al., "Breastfeeding practices among adolescent mothers and associated factors in Bangladesh (2004–2014)," *Nutrients*, vol. 13, no. 2, p. 557, 2021.
- G. A. Ndum Okwen, E. D. Karimuribo, H. A. Ngowi, and E. N. Fombang, "Exclusive breastfeeding and its determinants in Yaoundé, Cameroon: A retrospective survival analysis," *Journal of Pregnancy*, vol. 2022, no. 1, p. 8396586, 2022.
- Z. Yang, Y. Ding, S. Song, Y. Zhang, A. Li, M. Su, and Y. Xu, "Factors affecting the breastfeeding duration of infants and young children in China: A cross-sectional study," *Nutrients*, vol. 15, no. 6, p. 1353, 2023.
- B. Teshale and G. A. Tesema, "Timely initiation of breastfeeding and associated factors among mothers having children less than two years of age in sub-Saharan Africa: A multilevel analysis using recent Demographic and Health Surveys data," *PLOS ONE*, vol. 16, no. 3, p. e0248976, 2021.
- Jama et al., "Exclusive breastfeeding for the first six months of life and its associated factors among children age 6–24 months in Burao district, Somaliland," *International Breastfeeding Journal*, vol. 15, no. 1, p. 5, 2020.
- K. Temesgen et al., "Early cessation of breastfeeding and the associated factors among mothers with children aged 2 to 3 years in rural Southern Ethiopia: A community-based cross-sectional study," *BMC Nutrition*, vol. 9, no. 1, p. 22, 2023.
- D. S. Yimer, O. S. Adem, M. Arefayene, T. Chanie, and M. L. Endalifer, "Exclusive breastfeeding practice and its associated factors among children aged 6–23 months in Woldia Town, Northwest Ethiopia," *African Health Sciences*, vol. 21, no. 4, p. 1877, 2021.
- Bürger et al., "Factors associated with (exclusive) breastfeeding duration—Results of the SUKIE-Study," *Nutrients*, vol. 14, no. 9, p. 1704, 2022.
- S. Raihana, A. Alam, T. M. Huda, and M. J. Dibley, "Factors associated with delayed initiation of breastfeeding in health facilities: Secondary analysis of Bangladesh demographic and health survey 2014," *International Breastfeeding Journal*, vol. 16, no. 1, p. 14, 2021.
- Lin, D. Chen, J. Huang, Y. Li, X. Wen, P. Ou, and H. Shi, "Breastfeeding is associated with reduced risks of central obesity and hypertension in young school-aged children: A large, population-based study," *International Breastfeeding Journal*, vol. 18, no. 1, p. 52, 2023.
- J. Anderson et al., "Factors associated with severe respiratory syncytial virus disease in hospitalised children: A retrospective analysis,"

- Archives of Disease in Childhood, vol. 107, no. 4, pp. 359–364, 2022.
15. H. F. Alharbi, N. S. Alzahrani, A. M. Almarwani, S. A. Asiri, and F. M. Alhowaymel,

“Patients' satisfaction with nursing care quality and associated factors: A cross-sectional study,” *Nursing Open*, vol. 10, no. 5, pp. 3253–3262, 2023.