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Original Research Article

ASSESSMENT OF BREASTFEEDING PRACTICES AMONG MOTHERS OF INFANTS ATTENDING A TERTIARY CARE HOSPITAL IN HARYANA

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ABSTRACT

Background: Breastfeeding plays a vital role in ensuring optimal nutrition, immunity, and development during infancy. Despite strong global and national recommendations, breastfeeding practices remain suboptimal in many regions of India. **Objective:** To assess breastfeeding and complementary feeding practices among mothers of children up to one year of age and identify factors associated with early cessation or inadequate breastfeeding.

Materials and Methods: A hospital-based cross-sectional study was conducted over 12 months in the Department of Pediatrics, Adesh Medical College and Hospital, Haryana. A total of 227 mothers of infants aged 0–12 months were interviewed using a semi-structured, validated questionnaire.

Results: The majority of mothers were aged 20–24 years, had school-level education, belonged to urban areas, and were housewives. Only 49.8% initiated breastfeeding as the first feed. Lack of milk secretion (65.8%) was the most common reason for not initiating breastfeeding. Exclusive breastfeeding for six months was practiced by only 31% of mothers. Complementary feeding was introduced before six months in 79.3% of cases, and most mothers used readymade food. Spillage was the most frequently reported problem during feeding (93%).

Conclusion: Breastfeeding and complementary feeding practices in the study population were found to be suboptimal. There is a need for improved antenatal counseling, awareness about early initiation, exclusive breastfeeding, and continued support for working mothers. Establishing lactation support services can help bridge knowledge and practice gaps.

Keywords: Breastfeeding practices, exclusive breastfeeding, complementary feeding, maternal health, infant nutrition.

INTRODUCTION

Infants are most vulnerable to nutrition-related health issues in their first six months, a period of rapid growth. Breastfeeding provides essential nutrition, supporting healthy development and benefiting both infant and maternal health. Its importance is globally recognized for ensuring long-term well-being.[1] UNICEF and WHO recommend early initiation of breastfeeding, exclusive breastfeeding (EBF) for the first six months, and continued breastfeeding up to 24 months. Infants should not be given any supplementary liquids such as honey, water, glucose water, or gripe water during the first six months.[2] EBF is crucial for preserving the infant best health condition, which includes boosting their nutrition, immunity, and developmental results. It lowers the chance of getting obesity, diabetes, and asthma.[3] According to WHO, breast milk prevents infant morbidity and saves more lives than any other intervention. It provides all essential nutrients and energy for early development and offers long-term benefits for both child and mother. Exclusive breastfeeding (EBF) helps prevent dehydration, respiratory infections, otitis media, necrotising

enterocolitis (NEC), and sudden infant death syndrome (SIDS) in infants. For mothers, EBF supports birth spacing through lactational amenorrhea and reduces the risk of breast and ovarian cancers.[4]

Despite recommendations from health agencies, global breastfeeding rates remain low. Only 43% of newborns are breastfed within the first hour of birth, and just 40% of infants under six months are exclusively breastfed.[5] Only 46% of infants aged 0–6 months are exclusively breastfed, as per NFHS-4. Neonatal mortality accounts for over 60% of infant deaths and about 40% of all under-five deaths. Over 75% of children in India miss early breastfeeding initiation, and more than 50% are not exclusively breastfed. Optimal breastfeeding could prevent over 15% of childhood deaths in India. Lack of exclusive breastfeeding for six months contributes to around 1.4 million deaths, and about 10% of under-five children suffer from various morbidities.[6]

Appropriate breastfeeding and complementary feeding require accurate information and support from family, community, and the healthcare system. Factors like limited food availability, poor hygiene, and lack of awareness about proper feeding contribute to malnutrition. Despite various educational and training efforts, the adoption of healthy eating practices remains low.[7] EBF is good for mother and baby health and well-being. For a year or more, breastfeeding should be maintained while introducing complementary food.[8] Successful initiation and continuation of breastfeeding depend on several factors, including breastfeeding education, supportive hospital policies and practices, timely and regular follow-up care, and encouragement from family and society. It is now well established that breastfeeding is universal in India – both in urban and rural areas – and continues into early childhood years; and plays an important role in the context of child health.[9]

Despite the fact that EBF has many benefits, breastfeeding practices and duration differ greatly throughout India. Considering these factors, the present study was conducted to assess breastfeeding practices among mothers attending a tertiary care hospital. The objective was to identify risk factors associated with improper breastfeeding to support the promotion of proper breastfeeding practices.

MATERIALS AND METHODS

Study Design and Setting: This outpatient-based, cross-sectional study was conducted in the Department of Pediatrics at Adesh Medical College and Hospital, Shahabad, Haryana. Ethical clearance was obtained from the institutional research and ethics committee prior to commencement. The study aimed to assess breastfeeding practices among mothers of infants up to one year of age who visited the hospital. The study was observational, descriptive, single-centric, and hospital-based. It was designed to gather real-world insights into breastfeeding behavior and influencing factors in a clinical outpatient setting.

Data Collection: The data collection was carried out over a period of 12 months following ethical approval. This time frame allowed for the inclusion of a diverse and representative sample of mothers across different seasons and healthcare needs. Mothers attending the pediatric OPD and immunization center with infants aged up to one year were interviewed during their first visit using a self-designed, semi-structured questionnaire. The questionnaire was validated by institutional and external experts to ensure reliability and relevance. All questions were close-ended, and informed consent was obtained from each participant before data collection.

Inclusion and Exclusion Criteria: The study included mothers on their first visit to the pediatric outpatient department or immunization center with children aged up to one year. Children with a history of NICU stay, chronic illnesses, or congenital anomalies were excluded from the study to eliminate confounding factors that might influence breastfeeding practices.

Sample Size Determination: To determine the required sample size, a breastfeeding prevalence rate of 65% from previous studies was considered. Using a 95% confidence interval, the standard Z value of 1.96 was applied. The relative precision was set at 10% of the prevalence, i.e., 0.065. With p as 0.65 and q (1 – p) as 0.35, the formula $n = Z^2 \times p(1–p) / d^2$ was used for calculation. This yielded a sample size of 206. To account for a possible 10% non-response rate, an additional 21 participants were added, resulting in a final sample size of 227.

Statistical Analysis: Data was entered into Microsoft Excel and analyzed using SPSS software. Results were expressed in terms of absolute numbers and percentages. Data was categorized into relevant subgroups and represented through appropriate tables and visual aids. Pie charts were used for binary variables, while bar graphs were employed for variables with more than two categories.

RESULTS

The majority of mothers (67%) were aged between 20–24 years, followed by 20.3% in the 30–40 age group. Most participants had school-level education (53.3%), while 21.6% were illiterate, and 25.1% had higher education (graduation or post-graduation). Urban residents comprised 57.3% of the sample, with the remaining 42.7% from rural areas. Nuclear families were slightly more common (58.1%) than joint families (41.9%). A large proportion of mothers were housewives (89%), with only 11% employed. Socioeconomically, 38.3% belonged to the lower-middle class, followed by 27.8% in the upper-middle, 18.5% in the upper-lower, 8.8% in the lower, and 6.6% in the upper class. [Table 1]

Table 1: Socio-demographic profile of participating mothers

Variable	Domain	Number	Percentage
Age group	15-19 Years	9	4.0
	20-24 Years	152	67.0
	25-29 Years	20	8.8
	30-40 Years	46	20.3
Education of mother	Illiterate	49	21.6
	Graduation	43	18.9
	Post-graduation	14	6.2
	School level	121	53.3
Residence locality	Urban	130	57.3
	Rural	97	42.7
Type of family	Nuclear	132	58.1
	Joint	95	41.9
Occupation of mother	Housewife	202	89.0
	Working	25	11.0
Socioeconomic class	Lower	20	8.8
	Lower Middle	87	38.3
	Upper Lower	42	18.5
	Upper Middle	63	27.8
	Upper	15	6.6

Among the mothers, 44.5% were primigravida and 55.5% were multigravida. Normal vaginal delivery (NVD) was reported in 55.9% of cases, while 44.1% underwent lower segment cesarean section (LSCS). Nearly half of the children (47.6%) were under 6 months of age, and 52.4% were between 6–12 months. A large majority (87.2%) had a birth weight above 2500 grams, with only 12.8% weighing less than 2500 grams. Most children (81.1%) were born at term, 18.1% were preterm, and 0.9% post-term. In terms of gender, 53.7% were male and 46.3% were female. [Table 2]

Table 2: Obstetric and child characteristics of participants

Variable	Domain	Number	Percentage
Gravida	Primigravida	101	44.5
	Multigravida	126	55.5
Mode of delivery	LSCS	100	44.1
	NVD	127	55.9
Age of child	<6 Months	108	47.6
	6-12 Months	119	52.4
Birth weight	<2500 gm	29	12.8
	>2500 gm	198	87.2
Gestation age	Pre term	41	18.1
	Term	184	81.1
	Post term	2	0.9
Gender of child	Male	122	53.7
	Female	105	46.3

Nearly half of the infants (49.8%) received breast milk as their first feed, while others were given formula (24.7%), cow milk (23.3%), or other feeds (2.2%). Among those who did not initiate breastfeeding, the most common reason was no milk secretion (65.8%), followed by maternal illness (18.4%), reluctance (10.5%), and infant refusal (5.3%). The majority of mothers (83.2%) breastfed 5–8 times per day, with fewer breastfeeding more than 8 times (9.7%) or less than 5 times (7.1%). Regarding night feeds, 46.9% of infants were fed once, 38.1% twice, and 15% three times during the night. About 65.5% of mothers breastfed on a scheduled routine, while 34.5% fed on demand. The average duration of each breastfeeding session was less than 10 minutes for 38.9% of mothers, 10–20 minutes for 25.7%, 20–30 minutes for 22.1%, and more than 30 minutes for 13.3%. Burping after feeding was practiced by 89.4% of mothers, while 10.6% did not burp their infants. [Table 3]

Table 3: Breastfeeding practices among participating mothers

Variable	Domain	Number	Percentage
First feed	Breastfeed	113	49.8
	Cow milk	53	23.3
	Formula feed	56	24.7
	Others	5	2.2
Reason for not initiating breastfeeding	No milk secretions	75	65.8
	Illness of mother	21	18.4
	Reluctant mother	12	10.5
	Infant refused to suck	6	5.3
Frequency of breast feeding	<5 times	8	7.1
	5 -8 times	94	83.2

	>8 times	11	9.7
Night feeds	Once	53	46.9
	Twice	43	38.1
	Thrice	17	15
Infant breastfed started	On schedule	74	65.5
	On demand	39	34.5
Average breastfeeding duration	<10 min	44	38.9
	10-20 min	29	25.7
	20-30 min	25	22.1
	>30 min	15	13.3
Mother burping	Yes	101	89.4
	No	12	10.6

Exclusive breastfeeding (EBF) for the recommended 6 months was reported by 31% of mothers. A higher proportion breastfed exclusively for 3 months (33.6%), while 24.8% did so for only 1 month, and 10.6% continued EBF up to 12 months. Among mothers who did not practice exclusive breastfeeding, the primary reason was lack of milk secretion (65.8%), followed by maternal illness (18.4%), reluctance to breastfeed (10.5%), and infant refusal to suck (5.3%). [Table 4]

Table 4: Duration and reasons for discontinuation of exclusive breastfeeding

Variable	Domain	Number	Percentage
Duration of exclusive breastfeeding	1 month	28	24.8
	3 months	38	33.6
	6 months	35	31
	12 months	12	10.6
reason for not doing exclusive breastfeeding	No milk secretions	75	65.8
	Illness of mother	21	18.4
	Reluctant mother	12	10.5
	Infant refused to suck	6	5.3

The majority of mothers (79.3%) initiated complementary feeding before 6 months of age, while 15.4% started between 6–12 months, and only 5.3% after 12 months. Most infants (81.5%) were given readymade food, with only 18.5% receiving homemade options. In terms of feeding frequency, 49.3% of infants were fed 1–2 times daily, 46.3% were fed 3–4 times, and 4.4% received complementary food more than 4 times a day. The most commonly reported problem during feeding was spillage (93%). A small proportion of mothers reported issues like loose stools (3.1%), vomiting (3.1%), and feeding refusal (0.9%). [Table 5]

Table 5: Complementary feeding practices and related problems

Variable	Domain	Number	Percentage
Time of complementary feeding	<6 months	180	79.3
	6-12 months	35	15.4
	12-24 months	12	5.3
Complementary feeding type	Homemade food	42	18.5
	Readymade food	185	81.5
Complementary feed per day	1-2 times	112	49.3
	3-4 times	105	46.3
	>4 times	10	4.4
Problems faced during feeding	Spills the feed	211	93.0
	Loose stool	7	3.1
	Vomiting	7	3.1
	Refuse	2	0.9

DISCUSSION

Breast milk is the most nutrient-rich and safest food for infants up to six months of age. It supports digestion, reduces the risk of gastrointestinal issues, and plays a critical role in promoting growth, immunity, and cognitive development. It also protects against common childhood illnesses like pneumonia and reduces the risk of obesity later in life.[10] In the present study, most mothers (67%) were aged 20–24 years, similar to findings by Patel et al. and Madhu et al. in Bhopal and Bangalore, respectively.[11,12] In contrast, a study by Manyeh et al. in Ghana reported a higher proportion of breastfeeding mothers above 30 years, likely due to sociodemographic and cultural differences.[13]

Over half of the mothers in our study (53.3%) had school-level education, with 21.6% being illiterate and 25.1% having higher education. These findings align with those of Patel et al. and Madhu et al.[11,12] However, a study in Kerala, India's most literate state, by Krishnedu and Devaki, found a higher proportion (58.3%) of graduate mothers, highlighting regional educational disparities.[14] The majority of mothers were housewives (89%), a stark contrast to findings from Kerala and Gujarat where nearly half or more were working.[14,15] This may reflect regional

differences in literacy and employment opportunities for women. Socioeconomically, most participants belonged to the lower-middle (38.3%) and upper-middle (27.8%) classes. Randhawa et al. in Patiala observed a larger proportion of mothers from lower socioeconomic backgrounds,[16] whereas Patel et al. found a higher proportion in the upper class in rural regions,[11] again reflecting regional variability.

Infants aged 6–12 months made up 52.4% of the sample. A similar age skew was noted by Sabreen et al., with only 18.2% in the 6–8-month age group.[17] Our study also showed a male predominance (53.7%), consistent with findings by Sabreen et al,[17] likely influenced by cultural preferences and health-seeking behavior favoring male children. Of the mothers who did not initiate breastfeeding, the leading cause was lack of milk secretion (65.8%), followed by maternal illness (18.4%), reluctance (10.5%), and infant refusal to suck (5.3%). Similar trends were reported by Sabreen et al,[17] and Sriram et al., where inadequate milk secretion was the primary reason for early cessation.[18] This highlights the need for better lactation support and education.

Among breastfeeding mothers, 89.4% practiced burping. Comparable awareness was observed in studies by Vijayalakshmi et al. (91.8%) and Sultania et al. (92%).[19,20] The slightly lower practice rate in our study could be attributed to differences in rural versus urban settings. Exclusive breastfeeding (EBF) for six months was reported by 31% of mothers, with 33.6% maintaining it for three months. This contrasts with higher EBF rates in studies by Aneja et al. (80.36%) and Chowdhury et al. (63.44%).[21,22] Reasons for discontinuation mirrored earlier findings, with no milk secretion being the most common (65.8%). Early motherhood, adolescent pregnancies, and misconceptions about milk adequacy were contributing factors, consistent with existing literature on adolescent breastfeeding behaviors.[23]

Complementary feeding is essential when breast milk alone no longer meets nutritional needs. It must begin timely—ideally at six months—and be nutritionally adequate.[10] However, in our study, 79.3% of mothers introduced complementary feeding before six months. This early initiation is higher than the national prevalence of 42.7% for children receiving complementary feeding at 6–8 months.[24] Regional studies echo similar variability: in Kolkata, only 36% initiated at the correct age, while in Tamil Nadu and West Bengal, early and late introductions were both prevalent.[25-27]

Readymade food was the predominant type of complementary feed (81.5%) in our study. This differs from findings by Ganesan et al., where diets were more diverse and included cereal, fruits, vegetables, and dairy.[28] The preference for readymade food could be due to urban influence, lack of awareness, or convenience factors. Strengths of the study include the use of validated questionnaires and direct interviews. However, limitations such as recall and social desirability bias, hospital-based sampling, and a short study period may affect generalizability. A community-based approach over a longer duration is recommended for broader insights.

CONCLUSION

This study examined breastfeeding practices among mothers of children up to one year of age. Breastfeeding was initiated in only 49.8% of cases, with lack of milk secretion as the main barrier. Complementary feeding was commonly introduced before six months, and spillage was the most reported feeding issue. Improved antenatal counseling is essential to promote early initiation, exclusive breastfeeding for six months, and continuation up to two years. Mothers should be educated on breastfeeding during illness, proper breast care, and the benefits for both mother and child. Working mothers need guidance on expressing and storing breast milk. Establishing lactation clinics can further support positive breastfeeding practices.

REFERENCES

1. Dieterich CM, Felice JP, O'Sullivan E, Rasmussen KM. Breastfeeding and health outcomes for the mother-infant dyad. Pediatr Clin North Am. 2013;60(1):31–48.
2. Issaka AI, Agho KE, Burns P, Page A, Dibley MJ. Determinants of inadequate complementary feeding practices among children aged 6–23 months in Ghana. Public Health Nutr. 2015;18(4):669–78.
3. American Academy of Pediatrics. Policy statement: breastfeeding and the use of human milk. Pediatrics. 2012;129(3):e827–41.
4. World Health Organization. The optimal duration of exclusive breastfeeding. Geneva: WHO; 2001.
5. Black RE, Allen LH, Bhutta ZA, Caulfield LE, De Onis M, Ezzati M, et al. Maternal and child undernutrition: global and regional exposures and health consequences. Lancet. 2008;371(9608):243–60.
6. World Health Organization. Exclusive breastfeeding for six months best for babies everywhere. Geneva: WHO; 2011.
7. Ministry of Health and Family Welfare (MOHFW). Guidelines for enhancing optimal infant and young child feeding practices. New Delhi: Government of India; 2013.
8. Jones G, Steketee RW, Black RE, Bhutta ZA, Morris SS. How many child deaths can we prevent this year? Lancet. 2003;362(9377):65–71.
9. Kramer MS. "Breast is best": the evidence. Early Hum Dev. 2010;86(11):729–32.
10. Karmee N, Satapathy S, Tripathy R. Infant and young child feeding practices among mothers attending an Urban Health Training Centre (UHTC): a cross-sectional (mixed methodology) study in Berhampur, South Odisha, India. Int J Contemp Pediatr. 2017;5(1):161–8.
11. Patel S, Nigam KK, Babu GC, Kadali RM. A study of breast-feeding practices among rural women. Public Health Rev Int J Public Health Res. 2020;7(6).
12. Madhu K, Chowdary S, Masthi R. Breast feeding practices and newborn care in rural areas: a descriptive cross-sectional study. Indian J Community Med. 2009;34(3):243–6.
13. Manyeh AK, Amu A, Akpakli DE, Williams JE, Gyapong M. Estimating the rate and determinants of exclusive breastfeeding practices among rural mothers in Southern Ghana. Int Breastfeed J. 2020; 15:1–9.
14. Krishnendu M, Devaki G. Knowledge, attitude and practice towards breastfeeding among lactating mothers in rural areas of Thrissur District of Kerala, India: a cross-sectional study. Biomed Pharmacol J. 2017;10(2):683–90.
15. Nagar NS, Thomas E, Nagar SS, Godara NR. Study on breastfeeding practices among rural women in the field

practice areas of a tertiary care teaching hospital. Int J Reprod Contracept Obstet Gynecol. 2019;8(2):463.
16. Randhawa A, Chaudhary N, Gill B, Singh A, Garg V, Balgir R. A population-based cross-sectional study to determine the practices of breastfeeding among the lactating mothers of Patiala city. J Family Med Prim Care. 2019;8(10):3207–13.
17. Agrawal S, Vaidya R, Marwaha M, Anand BK, Garg RK. A study of complementary feeding practices amongst mothers of children aged six months to two years attending an immunisation clinic. Int J Contemp Med Res. 2019;6(4):9–12.
18. Sriram S, Soni P, Thanvi R, Prajapati N, Mehariya K. Knowledge, attitude and practices of mothers regarding infant feeding practices. Natl J Med Res. 2013;3(2):147–50.
19. Vijayalakshmi P, Susheela T, Mythili D. Knowledge, attitudes, and breast feeding practices of postnatal mothers: a cross-sectional survey. Int J Health Sci. 2015;9(4):364.
20. Sultania P, Agrawal NR, Rani A, Dharel D, Charles R, Dudani R. Breastfeeding knowledge and behavior among women visiting a tertiary care center in India: a cross-sectional survey. Ann Glob Health. 2019;85(1).
21. Aneja B, Singh P, Tandon M, Pathak P, Singh C, Kapil U. Etiological factors of malnutrition among infants in two urban slums of Delhi. Indian Pediatr. 2001;38(2):160–5.
22. Chowdhury R, Sinha B, Sankar MJ, Taneja S, Bhandari N, Rollins N, et al. Breastfeeding and maternal health outcomes: a systematic review and meta-analysis. Acta Paediatr. 2015; 104:96–113.
23. Wambach KA, Cole C. Breastfeeding and adolescents. J Obstet Gynecol Neonatal Nurs. 2000;29(3):282–94.
24. World Health Organization. Expert group consultation on supporting the infant and young child nutrition through improving feeding practices and the food environment. Geneva: WHO; 2022.
25. Dasgupta A, Naiya S, Ray S, Ghosal A, Pravakar R, Ram P. Assessment of infant and young child feeding practices among the mothers in a slum area of Kolkata: a cross-sectional study. Int J Biol Med Res. 2014;5(1):3855–61.
26. Khan AM, Kayina P, Agrawal P, Gupta A, Kannan AT. A study on infant and young child feeding practices among mothers attending an urban health center in East Delhi. Indian J Public Health. 2012;56(4):301–4.
27. Kavitha S, Nadhiya C, Parimalavalli R. Study of complementary feeding practices among mothers of infants aged six months to one year. 2014.
28. Ganesan S, Jayaraj J, Geminiganesan S, Rajan M. A study on parental awareness of feeding practices in children in the age-group 12–24 months. J Prev Med Hyg. 2022;62(4):E909.