International Journal of Life Sciences, Biotechnology and Pharma Research Vol. 14, No. 2, February 2025 Online ISSN: 2250-3137
Print ISSN: 2977-0122

DOI: 10.69605/ijlbpr_14.2.2025.134

Original Research

An Observational study to evaluate the breast feeding practices among the Post-natal mothers of a Tertiary care hospital in rural Vadodara

Dr. Ankita S. Parmar[1], Dr. Dhara I. Zalavadiya[2]

[1]Associate Professor, Department of Community Medicine, SmtB.K.Shah Medical Institute and Research Centre, Piparia, Vadodara, Gujarat, India
[2]Professor, Department of Community Medicine, Baroda Medical College,Vadodara,Gujarat, India

Corresponding Author
Dr. Ankita S. Parmar
Associate Professor, Department of Community Medicine, Smt B.K.Shah Medical Institute and Research Centre, Piparia, Vadodara, Gujarat, India
Email:dr.ankita.parmar@gmail.com

Received: 16 January 2025 Accepted: 25 February 2025

Abstract

Background : Breast feeding is important for child survival, health, nutrition, development of baby trust, sense of security, development of brain and learning readiness.The World Health Organization (WHO) recommends exclusive breastfeeding for the first six months of life and the addition of complementary feeds from six months onwards, with continued breastfeeds till at least two years of age

Methodology:A study was conducted among the 50 post natal mothers in OBGY department in post natal ward by purposive sampling method. A pre-tested questionnaire was used. Over a period of 3 months, all consecutive mothers admitted in post natal ward were interviewed.Study assessed the knowledge and practices of mother regarding breast feeding and breast feeding was observed to check for proper attachment and positioning.

Results: Out of 50 mothers, 84% mothers were 20-25 year age group. 44% of mothers had up to primary education.28 % mothers showed all the four signs of correct attachment.About 16% mothers showed all the signs of good body positioning and 82% of babies showed the signs of effective suckling.14% mothers did not know about the early initiation for breast feeding. Majority i.e. 96% had no knowledge regarding pre lacteal feeds and harms in giving pre lacteal feeds. 12% mothers did not feed colostrum to their baby and 86% were not aware about the benefits of colostrum. Around 94% mothers were not at all aware about the benefits of breast feeding and breast milk. 28% mothers did not know when to start complementary feeding in babies or about exclusive breast feeding.

Conclusion: Breast feeding practices related to correct attachment and proper positioning was found to be poor in this study. This indicates the need to demonstrate mothers about proper attachment and positioning of baby during breast feeding. It was observed that the knowledge regarding benefits of breastfeeding, colostrum feeding, exclusive breast feeding and complementary feeding initiation was inadequate.

Key words: Breast feeding, knowledge, practices, observation, attachment and positioning

Introduction

Breastfeeding is the optimal method for achieving a normal growth and development of the baby. Breast feeding is important for child survival, health, nutrition, development of baby trust, sense of security, development of brain and learning readiness.[(1)]The importance of exclusive breastfeeding and the immunological and nutritional values of breast milk has been demonstrated.[(2,3)] The World Health Organization (WHO) recommends exclusive breastfeeding for the first six months of life and the addition of complementary feeds from six months onwards, with continued breastfeeds till at least two years of age.[(4,5)]

NFHS-5 of Gujarat state, India reported 37.8 % of children aged under three years were breastfed within one hour of birth and 65% of the children under 6 months of age were exclusively breastfed.[(6)] Inadequate and inappropriate complementary feeding with unhygienic practices leads to recurrent and persistent infections and malnutrition in turn contributing to infant and under-five mortality. This is a concern for Indian scenario, where studies have suggested inability to maintain exclusive

breastfeeding and late introduction of complementary feeds.[7–9]

There are many public health implications for lack of awareness of breastfeeding like

- Decreased breastfeeding rates: Lack of awareness can result in delaying initiation of breast feeding and decrease in continuation rates which means fewer infants receiving the optimal nutrition and immune protection provided by breast milk. Without proper knowledge, mothers cannot properly weigh the advantages and disadvantages of breastfeeding, and thus they cannot make a truly informed decision about how they want to feed their babies.[10]
- Increased risk of infant illness and mortality: Lack of breastfeeding awareness may result in more infants being fed with substitutes that do not offer the same level of protection, leading to higher rates of illnesses and possibly increased infant mortality. Infants who are not breastfed are associated with an increased incidence of infectious morbidity, elevated risks of childhood obesity, type 1 and type 2 diabetes, leukaemia, and sudden infant death syndrome.[11]
- Negative impact on maternal health: Breastfeeding is not only beneficial for infants but also for mothers. It helps in postpartum recovery, reduces the risk of certain cancers (such as breast and ovarian cancer), and promotes bonding between mother and child. Lack of awareness may deprive mothers of these health benefits.[11]
- Economic burden: Formula feeding can be expensive, especially for families with limited financial resources. Lack of awareness about breastfeeding may lead to higher formula feeding rates, placing a financial burden on families and healthcare systems. The cost of formula feeding a child from 0-23 months is equivalent to 19.4% of a worker's nominal wage—compared to breast milk, which is free, safe, and hygienic for all babies. Given the context of poverty in India, families could certainly find more productive ways to spend their income.[12]
- Long-term health consequences: Breastfeeding has been linked to a lower risk of various chronic conditions later in life, such as obesity, type 2 diabetes, and cardiovascular disease. Failure to breastfeed due to lack of awareness may contribute to an increased risk of these health issues among both infants and mothers.[11]

WHO states that additional research is needed to clarify the effect of continued breastfeeding on certain health outcomes, available evidence strongly supports continued breastfeeding for health benefits to both mothers and children.[13]The present study was conducted with the objective to observe the breast feeding practices among the post natal mothers and to study mothers' knowledge and practices regarding breastfeeding.

Methodology

A study was conducted among the 50 post natal mothers in OBGY department in post natal ward by purposive sampling method. A pre-tested questionnaire was used. Over a period of 3 months, all consecutive mothers admitted in post natal ward were interviewed. Study was done in two parts:

1. Observation of the mother during breast feeding her baby.
2. Oral structured questionnaire to assess the knowledge and practices of mother.

The questionnaire included socio-demographic data, details on the initiation and duration of breastfeeding, pre-lacteal feeds given and colostrum. It also included top feeds given, knowledge of mother regarding benefits of breast feeding and regarding exclusive breast feeding. Informed verbal consent was obtained before data collection.

The assessment tool was prepared using WHO breast feeding observation form [14] was used to check the correctness of attachment, correct body position and correctness of effective sucking. The following arbitrary scoring was developed and adopted to grade positioning (mother and infant), infant's mouth attachment and effective suckling during breastfeeding.

1. Correctness of attachment: - According to signs of attachment scoring was given 0 – 4, 0 for no signs of good attachment and 4-all the four signs of good attachment.

A. Chin touching breast
B. Mouth wide open
C. Lower lip turned outward
D. More areola seen above baby mouth

2. Correct Body Position: According to signs of body position scoring was given 0 – 6 where 0 for no signs of correct body position and 6 for showing all the signs of correct body positioning.

A. Mother relaxed and comfortable
B. Mother sit straight and well supported back
C. Baby neck straight and body straight
D. Baby body turned towards mother
E. Baby body close to mother body and facing breast
F. Baby whole body supported

3. Correctness of effective sucking: Slow sucks, Deep sucks, sometimes pausing. 0 for no effective sucking and 1 for effective sucking present. The sum of scores was done with 0-5 poor, 6-8 average score and 9-11 good score.

Statistical analysis: Descriptive statistics were used to describe the socio-demographic characteristics and feeding practices of the study population. Associations between feeding practices and socio-demographic variables were determined using appropriate tests.

Results

Out of 50 mothers, 84% mothers were 20-25 year age group. Most of the mothers i.e. 44% had two living children. About 8% of mothers delivered before 9 months and 52% mothers had normal delivery. Around 40% mothers had baby weight less than 2.5 kg. There was significant association found between type of delivery and parity ($p<0.05$). However there was no any statistical association found between age and education with the infant's correct attachment during breastfeeding (Table 1). There was no any statistical association found between correct positioning and socio-demographic variables like age, education, parity and type of delivery. (Table 2)

Table 1: Socio-demographic profile of participants with correct attachment

Age of Mothers (years)	Well Attached	Not well attached	Total (%)	X^2
20-25	13	29	42(84)	$X^2=1.135$ p>0.05
>25	1	7	8(16)	
Education of mothers				
No Formal Education	0	5	5 (10)	$X^2=3.007$ P>0.05
Formal Education	14	30	45 (90)	
Parity				
1	9	12	21 (42)	$X^2=3.964$ P<0.05
≥2	5	24	29 ()	
Type of delivery				
Normal	3	23	26 (52)	$X^2=7.281$ P<0.05
Caesarean section	11	13	24 (48)	

Table 2: Socio-demographic profile of participants with correct positioning

Age of Mothers (years)	Correctly positioned	Not correctly positioned	Total (%)	X^2
20-25	7	35	42 (84)	$X^2=0.087$ p>0.05
>25	1	7	8(16)	
Education of mothers				
No Formal Education	0	5	5(10)	$X^2=1.058$ p>0.05
Formal Education	8	37	45(90)	
Parity				
1	4	17	21 (42)	$X^2=0.25$ p>0.05
≥2	4	25	29 (44)	
Type of delivery				
Normal	3	23	26 (52)	$X^2=0.802$ p>0.05
Caesarean section	5	19	24 (48)	

The arbitrary scoring system was developed to grade positioning (mother and infant), infant's mouth attachment and effective suckling during breastfeeding based on WHO criteria. Each criterion was assigned 1 point. (Table 3) When correctness of attachment was observed, 28 % mothers showed all the four signs of correct attachment. While observing for correctness in body positioning, only 16% mothers showed all the signs of good body positioning. 82% of babies showed the signs of effective suckling. The sum of all the scores was done and it was noted that 36 % mothers showed 0-5 poor scores.

Table 3: Scores for correctness of attachment, body position and effective sucking.

Score	Frequency (%)
Correctness of attachment	
0	4 (8%)
1	8 (16%)
2	14 (28%)
3	10 (20%)
4	14 (28%)
Correct Body Position	
0	6 (12%)
1	8 (16%)
2	6 (12%)

3	14 (28%)
4	2 (4%)
5	6 (12%)
6	8 (16%)
Correctness of effective sucking	
0	9(18)
1	41(82)

Out of 50 mothers, 10 (20%) mothers had problem feeding the infant and reasons identified were their baby was in NICU (4%) and lack of Breast milk (16%). 7 (14%) mothers did not know about the early initiation for breast feeding and they started by their own or helped by relatives. Regarding the starting time of breast feeding, majority of mothers i.e. 84% initiated feeding in 1-4 hours after delivery. 43 (86%) mothers said that staff members helped in early initiation of breast feeding. About 6% of mothers feed the baby less than 10 times per day. (Table 4)

Table 4: Knowledge of mother regarding initiation, frequency of breast feeding and complementary feeding (CF)

Starting time of breast feeding (Hours)	Frequency (%)
1-4 hours	42 (84%)
>4 hours	8 (16%)
No. of times Breast feed /day	
<10 times	3(6)
10 to 12 times	21(42)
>12 times	26 (52)
Age of the baby to start CF	
< 6 months	2 (4)
6 months	29 (58)
>6 months	5(10)
Don't Know	14 (28)

1 (2%) mother gave pre-lacteal feed to her baby and that was honey, she believed that it should be given to the baby soon after birth. Most of the mothers (96%) had no knowledge whether it should be given or not and what are the harms in giving pre lacteal feeds. 6 (12%) mothers did not feed colostrum to their baby; they expressed the colostrum and discarded it. Majority of mothers i.e. 43(86%) were not aware about the benefits of colostrum.

11 (22%) were given top feed, 1 baby was given cow milk and it was advised by relative and in remaining 10 babies top feed was formula milk advised by doctor. When asked about the benefits of breast feeding the baby, 47 (94%) mothers were not at all aware about the benefits of breast feeding and breast milk. 3 (6%) mothers were aware about some of the benefits of breast feeding.

When asked about age of the baby when you will start complementary feeding or how long you will exclusively breast feed the baby, 14 (28%) mothers did not know when to start complementary feeding in babies or about exclusive breast feeding. (Table 4)

Discussion

Out of 50 mothers, 84% mothers were 20-25 year age group. Similar findings were observed in the studies conducted byPrasantaRajak et al[15]and Hasan M et al[16] found that 78%< 25 years and 54.5% of mothers were under the age of 24.44% of mothers had up to primary education while 10% mothers were illiterate in contrast to the findings of Ayesha Jabeen et al[17] where most women were illiterate (34%) . The reason can be due to difference in sample size and study area in the present study.

In the present study 28 % mothers showed all the four signs of correct attachment compared to the similar studies conducted where they have reported proportion of mothers with good attachment in a varying range from 26 to 74 %. [18,19,20] About 16% mothers showed all the signs of good body positioning compared to the PrabhaShrivastava et al [19]which showed 47.7% mothers showing signs of good positioning. 82% of babies showed the signs of effective suckling compared to similar studies [19, 20] who have reported this in range of 46–90%. The difference in the proportion among various studies can be because of the difference in interpretation of the checklist used for good attachment and positioning. The studies conducted in India have used IMNCI guidelines as reference and those from outside India have either used WHO breastfeeding assessment guidelines or self-created checklist.

84% mothers in the study initiated breast feeding in 1-4 hours after delivery. The NFHS-5[6] data of Gujarat state indicates 37.8% children under age 3 years breastfed within one hour of birth. The better practices followed by the mothers in terms of early initiation of

feeding, pre-lacteal feeds and frequency of feeding can be attributed to the hospital deliveries.

The present study showed that only 2% mother gave pre-lacteal feed to her baby and that was honey due to traditional practices by the family. 96% mothers had no knowledge whether it should be given or not and the harms in giving pre lacteal feeds .Pre-lacteal feeds can delay the initiation of breast feeding and can prove as hindrance to successful breastfeeding. [21] 12% mothers did not feed colostrum to their baby as they discarded it and 86% were not aware about the benefits of colostrum.Parashar M et al [22] colostrum was discarded by 42% of mothers. Initial colostrum's are not given by many mothers due to various belief systems.

In the present study 58% mothers knew when to start complementary feeding in babies or about exclusive breast feeding. This result was similar to the previous studies conducted by Shrestha S et al [23] where 71.6% were knowledgeable regarding exclusive breastfeeding up to 6 months of age. WHO and UNICEF recommended early initiation of breastfeeding within 1 hour of birth and exclusive breastfeeding for the first 6 months of life. [4,5] This study showed that the knowledge about exclusive breastfeeding was good (58%) and initiation of breastfeeding soon after birth was high (84%).The limitation of this study is the small localized population under hospital setting. Hence, the findings in this study cannot be generalized to cover the entire population or state.

Conclusion and Recommendations

Breast feeding practices related to correct attachment and proper positioning was found to be poor in this study. This indicates the need to demonstrate mothers about proper attachment and positioning of baby during breast feeding. The knowledge regarding timely initiation of complementary feeding among the mothers is inadequate. By providing comprehensive breastfeeding education during pregnancy through antenatal classes, childbirth education programs, and one-on-one counselling sessions with healthcare providers can improve the breastfeeding initiation and continue for a lengthened period. Access to lactation consultants, breastfeeding peer support groups, and postnatal home visits from trained healthcare professionals can improve the continuation rates.

Training the health care professionals can be integrated in to medical and nursing curricula and include evidence-based practices for supporting breastfeeding mothers and infants. Implement the BFHI guidelines in healthcare facilities to create supportive environments for breastfeeding mothers and infants. Community-based breast feeding support programs can provide on-going support, encouragement, and practical assistance to breastfeeding mothers within their local communities. Develop culturally sensitive and tailored interventions that take into account the socio-cultural beliefs, norms, and practices related to breastfeeding in different communities Advocate for workplace policies that support breastfeeding, such as paid maternity leave, flexible work schedules, and lactation accommodation. Employers can create breastfeeding-friendly workplaces by providing designated breastfeeding rooms, break times for expressing milk, and access to lactation support services.

Launch media campaigns and public awareness initiatives to promote breastfeeding as the norm and dispel common myths and misconceptions. Conduct research to assess the effectiveness of breastfeeding promotion and support interventions and identify best practices for improving breastfeeding knowledge, awareness, and practice. Regular monitoring and evaluation of breastfeeding rates and outcomes can help guide future interventions and policy decisions.

Conflict of interest: Nil

Source of funding: Self-funded

Ethical Clearance: All the necessary permissions were taken from the authority for conducting the study. Informed consent obtained from participants in local language.

References

1. National guidelines on Infant and Young Child Feeding. Ministry of Human Resource Development. Department of Woman and Child Development. (Food and Nutrition Board). Government of India. 2004.
2. Arifeen S, Black RE, Antelman G, Baqui A, Caulfield L, Becker S. Exclusive breast-feeding reduces acute respiratory infection and diarrhea deaths among infants in Dhaka slums. Pediatrics. 2001;108:E67.
3. Dewey KG, Cohen RJ, Brown KH, Rivera LL. Effects of exclusive breast-feeding for four versus six months on maternal nutritional status and infant motor development: Results of two randomized trials in Honduras. J Nutr. 2001;131:262–7.
4. WHO, Global Strategy on Infant and Young Child Feeding, World Health Organzation, Geneva, Switzerland, 2003.
5. World Health Organization, Complementary Feeding: Report of the Global Consultation. Summary of Guiding Principles for Complementary Feeding of the Breastfed Child, World Health Organization, Geneva, Switzerland, 2003.
6. NFHS –V fact sheet. (2019-20) (Accessed on 08/7/21) Site: http://rchiips.org/NFHS/NFHS5_FCTS/NFHS5%20State%20Factsheet%20Compendium_Phase-I.pdf .
7. A. Aggarwal, S. Verma, and M. M. A. Faridi, "Complementary feeding—reasons for inappropriateness in timing, quantity and consistency," Indian Journal of Pediatrics, vol. 75, no. 1, pp. 49–53, 2008.
8. V. Sethi, S. Kashyap, and V. Seth, "Effect of nutrition education of mothers on infant feeding practices," The Indian Journal of Pediatrics, vol. 70, no. 6, pp. 463–466, 2003.
9. P. L. Engle, "Infant feeding styles: barriers and opportunities for good nutrition in India," Nutrition Reviews, vol. 60, supplement 5, pp. S109–S114, 2002.

10. McCann MF, Baydar N, Williams RL. Breastfeeding attitudes and reported problems in a national sample of WIC participants. J Hum Lact. 2007;23:314–324.
11. Stuebe A. The risks of not breastfeeding for mothers and infants. Rev Obstet Gynecol. 2009 Fall;2(4):222-31. PMID: 20111658; PMCID: PMC2812877.
12. Walters D, Phan L, Mathisen R. The Cost of Not Breastfeeding: Global Results from a New Tool. Health Policy and Planning. 2019 June 24. Available from https://doi.org/10.1093/heapol/czz050
13. Continued breastfeeding for healthy growth and development of children.Biological, behavioural and contextual rationale.WHO technical staff .July 2017. Available from: https://www.who.int/tools/elena/bbc/continued-breastfeeding. (Accessed on 20.05.2024)
14. Breast Feeding Counselling -A Training Course. Participants' manual Part one WORLD HEALTH ORGANIZATION CDD PROGRAMME UNICEF , Site: https://www.who.int/nutrition/publications/infantfeeding/bf_counselling_participants_manual1.pdf
15. Prasanta R., Anusree K.M.,Jadab K. J., Soumya G.Knowledge of Breastfeeding Practices Among Mothers Attending a Tertiary Care Setting in East India.Cureus. 2023 Apr; 15(4): e37146.Published online 2023 Apr 4. doi: 10.7759/cureus.37146
16. Hasan M, Hassan MN, Khan MSI, Tareq MA, Afroj .Prevalence, knowledge, attitudes and factors associated with exclusive breastfeeding among mothers in Dhaka, Bangladesh: a cross-sectional study. Popul. Med. 2021;3(September):23.Site: https://doi.org/10.18332/popmed/140132
17. Jabeen A, Rahman Amberina A, Gayathri V, et al. Assessment of Breastfeeding, Weaning, and Complementary Feeding Practices Among Women Attending a Tertiary Care Teaching Hospital in South India. Cureus 14(9): e28791. (September 05, 2022) doi:10.7759/cureus.28791.
18. S.B. Thakre, S.S. Thakre, S.M. Ughade, S. Golawar, A.D. Thakre, P. Kale.The breastfeeding practices: the positioning and attachment initiative among the mothers of rural Nagpur. J Clin diagnostic Res, 6 (7) (2012), pp. 1215-1218
19. P. Shrivastava, I. Saha, S. Nandy. A study on feeding practice of under 6 months infants attending the Nutrition Clinic of a tertiary care hospital of West Bengal, India EpidemiolBiostat Public Heal, 10 (4) (2013), Article e89471.
20. U. Dasgupta, S. Mallik, K. Bhattacharyya, J. Sarkar, B. Sk, A. Halder. Breast feeding practices: positioning attachment and effective suckling - a hospital based study in West Bengal/Kolkata. Indian J Matern Child Health, 15 (1) (2013), pp. 1-11
21. Yadavannavar M.C., Patil S.S. Socio cultural factors affecting breastfeeding practices and Decisions in rural women. Int. J. Plant Anim. Environ. Sci. 2011;37:100971.
22. Parashar M, Singh S, Kishore J, Patavegar BN. Breastfeeding Attachment and Positioning Technique, Practices, and Knowledge of Related Issues Among Mothers in a Resettlement Colony of Delhi. ICAN: Infant, Child, & Adolescent Nutrition. 2015; 7(6):317-322. doi:10.1177/1941406415602528
23. Shrestha S, Pokhrel M, Mathema S. Knowledge, Attitude and Practices among Mothers of Children 6 to 24 months of Age Regarding Complementary Feeding. JNMA J Nepal Med Assoc. 2020 Oct 15;58(230):758-763. doi: 10.31729/jnma.5274