

Breastfeeding Practices: Positioning, Attachment, and Awareness of Colostrum Feeding among Postnatal Mothers: A Hospital-Based Mixed Methods Study

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BREASTFEEDING PRACTICES: POSITIONING, ATTACHMENT, AND AWARENESS OF COLOSTRUM FEEDING AMONG POSTNATAL MOTHERS: A HOSPITAL-BASED MIXED METHODS STUDY

Abstract: One of the most effective ways to ensure a child's health and survival is breastfeeding. Colostrum feeding, positioning, and attachment play an important role in breastfeeding whereas poor breastfeeding technique leads to premature discontinuation of breastfeeding, poor milk transfer, Breast engorgement and the absence of colostrum during feeding might lead to an increase in the risk of infection. The current study aimed to assess positioning and attachment during breastfeeding among postnatal mothers, create awareness of colostrum feeding, and identify the factors associated with improper positioning and poor attachment. A Hospital-based mixed-methods study was conducted in August 2022 and September 2022 for 2 months in a tertiary hospital in Karur District, Tamil Nadu. In the quantitative phase, 114 Postnatal mothers breastfeeding techniques were continuously observed based on the World Health Organization's Baby-friendly hospital initiative, and Infant and young child feeding (IYCF) criteria were adopted and grades were given. In the qualitative phase, 40 staff nurses and 12 pediatricians were selected to state the action points to improve poor breastfeeding practices. The mean rank and Kendall's Concordance coefficient were used to calculate the data. Around 20.5% and 21.4% of Postnatal mothers demonstrated improper positioning and poor attachment, respectively. Primipara mothers, less than 15-day-old infants, and failure to receive breastfeeding counseling were associated with poor breastfeeding practices. They deserve more attention, support, and direction for effective breastfeeding. Awareness of colostrum feeding should be created through poster displays, and its importance should be stressed by healthcare workers to postnatal mothers. The action points need to be prioritized and implemented to achieve a baby friendly hospital in the district.

Keywords: positioning, attachment, breastfeeding, colostrum, postnatal

Introduction

Breastfeeding is the best way to feed infants, as it offers much more than just nutrition (Park's, 2021). World Health Organization and United Nations Children's Fund recommended that breastfeeding should be initiated within the first hour of childbirth and should be exclusively breastfed for the first 6 months of life (WHO, 2022). Yet Breastfeeding rates generally remain low globally. Only 44 per cent of newborns are exclusively breastfed during the first 5 months of their lives worldwide (UNICEF, 2021).

Exclusive Breast Feeding (EBF) can be defined as infant feeding with human milk in absence of any other liquids or solids (Mulder, 2006). Breastfeeding techniques play an important role in effective breastfeeding. (Dhandapany *et al.*, 2008) Good positioning always starts with getting postnatal mothers in a comfortable position whereas bringing newborns or infants to the postnatal mothers instead of bringing postnatal mothers to the baby initiates good attachment. Most difficulties can be avoided if good positioning and attachment are achieved at the initial feeds. Lack of proper positioning and attachment might lead to poor milk transfer, breast engorgement, blocked milk ducts and early discontinuation of breastfeeding (Nancy *et al.*, 2022).

Colostrum is the first milk produced by the breasts during pregnancy and it's the first milk which should be fed to the baby after birth it provides key nutrients in a concentrated form, has laxative effects, and

prevents jaundice by expelling bilirubin. Two-thirds of the cells in colostrum are white blood cells that produce antibodies and guard against infections(WHO, 1981).

According to National Family Health Survey - 5 data, only 63.7% of children are exclusively breastfed under 6 months of age in India (NFHS-5, 2021). There is a belief that colostrum is yellowish dirty, immature milk and thus will make the baby sick. Therefore, most mothers don't feed colostrum to their newborns (P Bhale and S Jain, 1999). Even though breastfeeding practice is almost universal among Indian mothers, incorrect techniques often lead to early discontinuation of breastfeeding and resorting to formula feeding (Nancy *et al.*, 2022). Hence, assessing the problems in breastfeeding and providing appropriate counselling on positioning and attachment was recommended.

Previous studies had shown that primigravidas required more support in the early postnatal period for young mothers with no formal education (Prajapati *et al.*, 2016); (Thakre *et al.*, 2012).

After a review of the literature, it was found that there is no documented study conducted in Karur, Tamilnadu on breastfeeding positioning and attachment and according to National Family Health Survey - 5 data, only 42.2% of children are exclusively breastfed under 3 years of age in the district (NFHS-5, 2021). Henceforth, the current study was presented with the following objectives.

Objectives

1. To assess the positioning and attachment during breastfeeding among postnatal mothers.
2. To create awareness of colostrum feeding and to identify the factors associated with improper positioning and poor attachment.

Methodology

This was a hospital-based mixed-method study carried out among postnatal mothers in the postnatal ward and paediatric outpatient department (OPD) in a tertiary-care hospital in Karur District, Tamil Nādu. In the quantitative phase, the Breastfeeding technique was assessed using both survey and observation methods whereas, in the qualitative phase, the action points were prioritized to improve breastfeeding practices by the ranking method (Nancy *et al.*, 2022).

In the quantitative phase, 5% of the mothers who failed to maintain proper breastfeeding techniques were considered and the sample size was calculated as 112 with 6% absolute precision and 95% confidence interval. Assuming nonresponse in 2 mothers, the final sample size was 114. Based on previous literature and Baby Friendly Hospital Initiative (BFHI) guidelines, A structured questionnaire was developed. The following grading system was used to observe and grade positioning, infant's mouth attachment and effective suckling during breastfeeding based on Infant and young child feeding (IYCF) (IYCF,2004) criteria adopted.

Criteria for correct body position:

- Mother holding infant's head and body straight
- Whether facing her breast, with the infant's nose opposite her nipple
- Infant's body close to her body
- Supports infant's whole body, not just neck and shoulders

Criteria for correct attachment of the baby:

- Chin touching breast

- Mouth wide open
- Lower lip turned outward
- More areola above than below the mouth

Criteria for correct effective sucking:

- Not sucking at all
- Not sucking effectively
- Sucking effectively

The healthcare professionals interviewed the postnatal mothers and observed the breastfeeding techniques ensuring privacy after informed consent was obtained. Each of the observation components was given a grade of poor, average or good. The data were entered and analysed using SPSS software.

In the qualitative phase, a questionnaire was developed containing 12 action points to improve poor breastfeeding practices based on previous literature (Nancy *et al.*, 2022). After obtaining informed consent, the questionnaire was self-administered to 40 staff nurses in the obstetrics and paediatrics department and 12 paediatricians and asked them to rank in order of their priority without any restriction. The ranked data were analyzed in SPSS software. Mean rank was determined for each action point and Kendall's Concordance Coefficient (Gearhart *et al.*, 2013) was used to calculate the overall agreement in the ranking.

Results

The number of postnatal mothers who were currently breastfeeding was 114. The mean age of the mothers was 26.3 ± 5.2 (Standard deviation) years. Nearly 57.3% of mothers were from rural areas whereas 42.7% of mothers were from urban areas. 63.4% of postnatal mothers continued their profession during pregnancy. About 42.7% of mothers were young and primipara mothers. Around 48.5% of mothers underwent caesarean section and 51.5% had undergone normal vaginal deliveries. Around 55.3% of mothers made antenatal visits and 64.7% of mothers received breastfeeding counselling.

Table 1 shows that 20.5% of mothers maintained improper positioning and 21.4% of mothers shows poor attachment to their babies. Around 32.4% of infants' sucking was ineffective and only 42% of mothers fed colostrum to the baby.

Table 1 Direct observation of breastfeeding techniques among postnatal mothers n= 114.

Direct observation of Breastfeeding techniques	%
1. Improper positioning maintained while breastfeeding	20.5%
2. Poor attachment	21.4%
3. Ineffective sucking of infants	32.4%
4. Colostrum not fed	42%

In Table 2, as suggested by the paediatricians, displaying posters on effective breastfeeding in the hospitals, conducting training for healthcare workers, and counselling should focus more on young and primipara mothers and assistance of healthcare workers to the postnatal mothers who have problems in breastfeeding were the priority action points ranked to improve breastfeeding techniques. Kendall's Concordance Coefficient (W) was 0.5 and it implies a weak agreement in ranking.

Table 2 Mean rank of action points prioritized by the paediatricians to improve breastfeeding techniques (n=12)

Action points	Mean rank
1. Displaying posters on proper breastfeeding positioning and attachment in the wards and OPDs	3.30
2. Conduct training for the healthcare workers involved in breastfeeding counselling.	3.71
3. Breastfeeding counselling should focus more on primipara mothers	5.02
4. Breastfeeding counselling should focus more on the young mothers	5.43
5. Assisting postnatal mothers who have problems in maintaining proper positioning and attachment.	5.69

In table 3, as suggested by the staff nurses in the obstetric and paediatrics department, breastfeeding counselling should focus more on young, illiterate and primary mothers, counselling on assisting postnatal mothers should be given to husbands and postnatal mothers and conducting training for healthcare workers involved in breastfeeding counselling were the priority action points ranked by the nurses to improve breastfeeding techniques. Kendall's concordance coefficient was 0.7 and it infers a weak agreement in ranking.

Table 3 Mean rank of action points prioritized by the staff nurses to improve breastfeeding techniques(n=40)

Action points	Mean rank
1. Breastfeeding counselling should focus more on the young mothers	2.33
2. Breastfeeding counselling should focus more on illiterate mothers	2.80
3. Breastfeeding counselling should focus more on primipara mothers	3.04
4. Counselling on assisting postnatal mothers during breastfeeding should be given to husbands and family members.	3.44
5. Conduct training for the healthcare workers involved in breastfeeding counselling.	5.56

Discussion

The present study found that 20.5% of mothers demonstrated improper positioning and 21.4% of mothers showed poor attachment. In contrast, in Pondicherry, a hospital-based cross-sectional study showed 28.3% of mothers demonstrated improper positioning and 27.3% of infants shows poor attachment (Nancy *et al.*, 2022).

A study in Chennai, Tamil Nādu showed that more than half of the mothers demonstrated incorrect breastfeeding techniques (Aswathaman *et al.*, 2018). A study in rural areas of North India found that only 9.7% had a good attachment and 0% had proper positioning techniques and also observed that

effective sucking was observed in 45.2% of infants. In the present study, effective sucking was observed in 67.6% of infants (Gupta *et al.*, 2008).

Similarly, A study in an urban resettlement colony located in East Delhi found that correct attachment and positioning were only in 7.5% of mothers (Parashar *et al.*, 2015). In the present study, the prior and regular antenatal visits and breastfeeding counselling made a lesser proportion of mothers with poor breastfeeding practices in the hospitals.

An international collaborative study reported that among the rich, in India, a large number of women (59%) gave “no milk” or “insufficient” as the reason for not breastfeeding their babies (WHO, 1991). A study in seven districts of Madhya Pradesh reported that only 51.5% stated that colostrum was important. A study in Assam showed that colostrum feeding was lower among rural mothers with lower education status and elders/relatives’ advice (Kakati *et al.*, 2016). In the present study, colostrum was fed only by 58% of mothers.

Factors such as age and parity of the postnatal mothers and breastfeeding counselling were associated with breastfeeding techniques. Myths and beliefs about colostrum milk were associated with colostrum feeding. Healthcare workers’ training, counselling focusing on young, illiterate and primigravida mothers, counselling to husbands and family members on assisting mothers during breastfeeding and assisting mothers who have difficulty in maintaining proper breastfeeding techniques were the priority action points to improve poor breastfeeding practices. Kangaroo mother care was suggested by paediatricians as one of the action points to be added.

The present study not only indicates the poor breastfeeding techniques and the factors associated with them. but also prioritized the key action points stated by paediatricians and staff nurses for effective breastfeeding practices by observation of the breastfeeding techniques, errors due to self-reported findings were minimized. As observation was done by the same healthcare worker, observers’ bias was minimized. Temporality could not be established since it was a cross-sectional assessment of breastfeeding practices. Being a single tertiary care hospital-based study, the findings cannot be generalized.

Conclusion

Primipara mothers, young mothers, less than 15 days old infants and failure to breastfeeding counselling influenced poor and average breastfeeding techniques. They deserve more attention, support and direction for effective breastfeeding. Every mother should be observed and counselled for effective breastfeeding practices and colostrum feeding. Posters creating awareness of breastfeeding practices and the importance of Colostrum feeding should be displayed in the hospital. The action points recommended by nurses and pediatricians need to be prioritized and implemented to achieve the level of a baby-friendly hospital.

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Conflicts of interest

There are no conflicts of interest.

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Appendix

1) Collection of Data:

Consent:

INFORMED CONSENT FORM

Title of The Study: Breastfeeding Practices – Positioning, Attachment and Awareness on Colostrum Feeding Among Postnatal Mothers – A Hospital-Based Mixed Methods Study

I have been informed by Ms. Subha. R pursuing PGDM in hospital and healthcare management from IIHMR Bangalore and is conducting the above-mentioned study. I Will be one of the study subjects, and I have no objection and will be part of that study. I also understand that the study does not contain any exercise that negatively impacts my health.

I understand that the medical information produced by the study will become part of the department record and will be treated as per the confidentiality regulation of the institute. I have been informed that the data is used for publication in literature and teaching purposes; names and other identifiers (e.g. photographs) will not be used without my written permission. I further understand that I may demand to see the photographs before giving any consent.

I understand that I may ask more questions about the study at any time and Ms Subha. R will be available to answer my questions and concerns at 9597378565.

I also understand that my consent is voluntary and I reserve the right to withdraw it and discontinue participation from the study at any time during the study.

I have explained to Mr/Mrs _____ the purpose of the research and the procedure in the language he/she could understand to the best of my ability.

(Investigator)

(Date)

I confirm that Ms Subha.R (Principal Investigator) has explained to me in the language that I can understand the purpose of the study and the procedure. Therefore I agree to give my consent to participate as a subject in this study and I will be accountable for this decision.

(Signature of participant)

(Date)

Questionnaire and Direct Observation on Postnatal mothers:

Survey and Observation on Breastfeeding Mother

Date of Observation:

Age of the mother:

Occupation:

Rural/Urban:

Primipara mother: Yes/No

1. What type of delivery did the mother have:

- Normal
- Caesarean Section without General Anesthesia
- Caesarean Section with General Anesthesia

Other: describe

2. When was your child born?

Date:

Approximate time:

Baby's weight at birth:

3. Did Colostrum fed to the baby?

- Yes
- No

4. Is the infant breastfed?

- Yes
- No

5. If yes, how many times in 24 hours?

6. Is there any difficulty in feeding?

7. For proper positioning, Check for

- **Mother holding infant's head and body straight**
- **Whether facing her breast, with the infant's nose opposite her nipple**
- **Infant's body close to her body**
- **Supports infant's whole body, not just neck and shoulders**

Grading and scoring of correct positioning: If any of the four criteria was achieved, it was graded as poor and scored 1, if any two of the four criteria were attained, it was graded as average and scored 2 and if any three or all four criteria were attained, it was graded good and scored 3-4.

Grade and Score:

8. Is the infant able to attach? To check the attachment, look for:

- **Chin touching breast**
- **Mouth wide open**
- **Lower lip turned outward**
- **More areola above than below the mouth**

Grading and scoring of correct attachment: If any of the four criteria was achieved, it was graded as poor and scored 1, if any two of the four criteria were attained, it was graded as average and scored 2 and if any three or all four criteria were attained, it was graded as good and scored 3-4.

Grade and Score:

9. Is the infant sucking effectively (that is, slow deep sucks, sometimes pausing)?

- Not sucking at all
- Not sucking effectively
- Sucking effectively

10. Does the mother have pain while breastfeeding?

- Yes
- No

If yes, then look for:

- Flat or inverted nipples, or sore nipples
- Engorged breasts or breast abscess

2)Action points to be prioritized by pediatricians and staff nurses:

Paediatrician /Staff Nurse Name:

Rank in order of your priority that helps in achieving effective breastfeeding practices:

ACTION POINTS	RANK
Breastfeeding counselling should focus more on the young mothers	
Breastfeeding counselling is crucial in the initial week after delivery.	
Conducting training for the healthcare workers involved in breastfeeding counselling.	
Assisting postnatal mothers who have problems in maintaining proper positioning and attachment.	
Counselling on assisting postnatal mothers should be given to husbands and family members.	
Breastfeeding counselling should focus more on primipara mothers.	

Breastfeed day and night, as often as your baby wants, at least 8 times in 24 hours should be recommended.	
Displaying posters on proper breastfeeding, positioning and attachment in the wards and hospital premises.	
Making postnatal mothers feel that breast milk is all their baby needs and not to give other foods (or) fluids.	
Counselling to treat thrush (ulcer or white patches in mouth).	
Teach the mother to treat breast or nipple problems.	
Breastfeeding counselling should focus more on illiterate mothers.	

Results:

Table 1: Direct observation of breastfeeding techniques among postnatal mothers (n= 114)

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