

# Identification of Breastfeeding Problems using LATCH Score and the Impact of Lactation Counselling: A Quasi-experimental Study

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## ABSTRACT

**Introduction:** Breastfeeding has important positive long-term health consequences for infants and their mothers. Assessing breastfeeding in the early postnatal period, prior to discharge, is crucial for successful breastfeeding. LATCH (Latch, Audible swallowing, Type of nipple, Comfort and Hold) score can be used to categorise mothers with poor breastfeeding scores and counsel them to prevent early breastfeeding cessation.

**Aim:** To identify breastfeeding problems using the LATCH score and to assess the impact of lactation counselling among postnatal mothers.

**Materials and Methods:** This quasi-experimental study was conducted in the Department of Paediatrics, ACSR Government Medical College and Hospital, Nellore, Andhra Pradesh, India, from June 2023 to December 2023. The study included 400 healthy term and singleton babies. LATCH scores were assessed at 6-12 hours after delivery. Mothers with breastfeeding problems were identified, corrected and counselled. The LATCH scores were reassessed again after 24-48 hours. Data were statistically

analysed using Chi-square test. The p-value <0.05 was considered to be statistically significant.

**Results:** The average age of the participants was 24.5 years, and most of them were illiterate. Out of 400 mothers, 344 (86%) mother-infant dyads had a LATCH score of <8 at 6-12 hours after delivery; this reduced significantly to 66 (16.5%) at 24-48 hours after breastfeeding support and training (p-value <0.001). Analysis of the association between demographic characteristics and LATCH scores showed that infants of certain subgroups, such as primi, caesarean, young, and less educated mothers, continued to experience lower LATCH scores.

**Conclusion:** The incidence of breastfeeding problems was high during the initial days after childbirth and was particularly prevalent among certain subgroups, such as caesarean mothers, primi-parous mothers, younger mothers and less educated mothers. However, systematic assessment using the LATCH score and timely supportive interventions can significantly improve breastfeeding outcomes.

**Keywords:** Feeding practices, Hospital deliveries, Improper position and attachment, Mother-infant dyads, Term babies

## INTRODUCTION

Exclusive breastfeeding plays a crucial role in promoting both short-term and long-term positive health outcomes for mothers and infants [1]. Infants who are breastfed for longer periods experience lower rates of infectious diseases and mortality, and they exhibit higher levels of intelligence compared to infants who are not breastfed or who are breastfed for shorter durations [2]. Breastfeeding is recognised as a significant intervention in lowering infant and under-five mortality rates [3,4]. Although breastfeeding is a natural norm, successful breastfeeding can be a complex task for some mother-infant pairs, especially in the early days following childbirth [5,6]. Common reasons for early breastfeeding discontinuation include mothers lacking confidence in their ability to breastfeed, difficulties with infant latching or suckling, breast pain or soreness, perceptions of insufficient milk supply and a lack of personalised encouragement from clinicians in the early postdischarge period. These challenges can be addressed through education about the benefits of breastfeeding [7].

Paediatricians play a crucial role in their practices by advocating for and supporting successful breastfeeding [8]. Evidence suggests that the initiation of breastfeeding early and the promotion of exclusive breastfeeding in the hospital before discharge are associated with improved rates of exclusive breastfeeding for up to six months and increased breastfeeding duration [9]. The period of initial hospitalisation presents a valuable opportunity for healthcare professionals to evaluate breastfeeding, provide education on proper breastfeeding techniques and enhance mothers' confidence in breastfeeding before they leave the hospital.

It is essential to have a structured approach to assess breastfeeding techniques, identify any related issues and take timely corrective actions. Hence, the present study was conducted to identify breastfeeding problems using a LATCH score and to assess the impact of lactation counselling among postnatal mothers.

## MATERIALS AND METHODS

This quasi-experimental study was conducted over a period of six months, from June 2023 to December 2023. The study participants were postnatal mothers who delivered at ACSR, Government General Hospital, Nellore, Andhra Pradesh, India. The study was conducted after obtaining Ethical Committee clearance (reference number-ECR/961/Inst/AP/2017/RR-20/83-23/28-04-23).

**Inclusion criteria:** All healthy term singleton babies delivered during the study period, along with their mothers were included in the study.

**Exclusion criteria:** Preterm babies, term babies referred from outside, neonates who required Neonatal Intensive Care Unit (NICU) admission, multiple births, and mothers with illnesses that prevented the assessment of the LATCH score were excluded from the study.

**Sample size calculation:** A total of 720 deliveries occurred at GGH, MCH block, Nellore. Out of these 720 deliveries, 320 were excluded for the reasons mentioned above. A total of 400 deliveries were included and interviewed using a non probability sampling method.

**Data collection:** A predesigned, pretested questionnaire [Annexure 1] was used to interview the mothers after obtaining written consent.

This questionnaire consists of questions regarding demographic details, parity, breastfeeding patterns, the weight of the baby, gestational age, and the LATCH score. The LATCH score was assessed initially after delivery, within 6 to 12 hours.

After identifying any breastfeeding issues during the initial assessment, mothers received counseling for about 30 minutes, from the authors, till they understood the issues. The education techniques are demonstrations by using visual aids on breastfeeding positions, latch techniques, identifying and rectifying nipple problems by tactile stimulation and/or nipple pullers, and breast engorgement management by syringing until discharge. Following morning and evening sessions of the intervention during the day, the LATCH scores were reassessed again 24-48 hours after delivery. There are five components in LATCH scale each component was scored between 0-2. A total of score 0-10 was given [10]. A score of more than or equal to 8 was considered as satisfactory [11]. This approach helped in the early recognition of factors causing a low LATCH score which were corrected through daily counseling, education and support.

## STATISTICAL ANALYSIS

The obtained data were entered into Microsoft Excel and analysed using the Statistical Package for the Social Sciences (SPSS) software version 20.0. The scores were summarised as frequency and percentage. The Chi-square test was used to assess the association between variables. The data were presented in tables. The p-value <0.05 was considered statistically significant.

## RESULTS

Among the 400 study neonates, the gender distribution in the sample was relatively balanced, with 220 (55%) boys. A notable finding was the high prevalence of low birth weight (<2500 g) in 240 (60%) of the neonates, which may be attributed to the study setting and population characteristics. Regarding maternal demographics, a significant portion of the mothers were primiparous, with 197 (49.3%) being first-time mothers, and 180 (45%) had undergone caesarean delivery. The maternal age distribution showed that the majority were between 21-30 years 280 (70%), with smaller proportions in the <20 years 25 (6.25%) and >30 years 95 (23.75%) categories. Educationally, 212 (53%) of the mothers were illiterate, 126 (31.5%) had a high-school education, 42 (10.5%) had studied up to intermediate, and 20 (5%) had completed graduation or above, which might have implications for breastfeeding knowledge and practices [Table/Fig-1]. Analysis of the association between demographic characteristics and LATCH scores showed that certain subgroups of mother-infant dyads continued to experience lower LATCH scores. Caesarean delivery, primiparity, and lower maternal education were identified as significant risk factors for lower LATCH scores during the initial 6-12 hour assessment [Table/Fig-1].

Although breastfeeding support improved scores across all groups, these subgroups continued to show lower scores at 24-48 hours compared to their counterparts. Specifically, neonates with birth weights <2500 g, primiparous mothers and those delivered via caesarean section demonstrated lower LATCH scores postintervention. Additionally, maternal education level was a significant predictor, with illiterate mothers having the highest proportion of low LATCH scores both initially and postintervention [Table/Fig-1].

The 'latch' component improved significantly, with 386 (96.5%) of mother-infant dyads achieving a score of 2 at 24-48 hours. While there were improvements in the 'audible swallowing' and 'hold' components, achieving the maximum score of 2 was less prevalent even after training. A total of 293 (73.2%) had a score of 2 for 'comfort during breastfeeding.' The number of mothers with flat or inverted nipples decreased from 44 (11%) to 5 (1.3%) after the intervention.

Mother-infant groups (n)	LATCH score <8		p-value
	At 6-12 h (n=344)	At 24-48 h (n=66)	
<b>Birth weight (grams)</b>			
<2500 (n=240)	212 (88.3%)	50 (20.8%)	0.04
>2500 (n=160)	132 (82.5%)	16 (10%)	
<b>Mode of delivery</b>			
Caesarean (n=180)	164 (91.1%)	50 (27.7%)	<0.001
Vaginal (n=220)	180 (81.8%)	16 (7.3%)	
<b>Parity</b>			
Primipara (n=197)	176 (89.3%)	48 (24.4%)	0.002
Multipara (n=203)	168 (82.7%)	18 (8.8%)	
<b>Maternal age (years)</b>			
>30 (n=95)	82 (86.3%)	22 (23.1%)	0.0175
20-30 (n=280)	240 (85.7%)	26 (9.3%)	
18-20 (n=25)	22 (88%)	18 (72%)	
<b>Mother's education</b>			
Illiterate (n=212)	195 (91.9%)	48 (22.6%)	0.036
Secondary and high school (n=126)	103 (81.7%)	11 (8.7%)	
Intermediate (n=42)	31 (75.6%)	5 (1.2%)	
Graduation and above (n=20)	15 (75%)	2 (1%)	

**[Table/Fig-1]:** Comparison of Low Scores (<8) between different subgroups of mother-infant dyads.

During the initial assessment at 6-12 hours, 346 (86.5%) had a low score in audible swallowing, 293 (73.2%) mother-infant dyads had a poor latch, 242 (60.5%) mothers required support to position the neonate, and 44 (11%) mothers had nipple problems. A total of 344 (86%) mother-infant dyads had a LATCH score of <8 at 6-12 hours after delivery, which reduced significantly to 66 (16.6%) at 24-48 hours after the breastfeeding support and training (p-value <0.001) [Table/Fig-2].

Component	Score (<2)	
	6-12 h	24-48 h
Latch	293 (73.2%)	14 (3.5%)
Audible swallowing	346 (86.5%)	98 (24.5%)
Type of nipple	44 (11%)	5 (1.3%)
Comfort	107 (26.8%)	27 (6.8%)
Hold	242 (60.5%)	54 (13.5%)

**[Table/Fig-2]:** Scores of individual components of LATCH scoring System at 6-12 Hour and 24-48 hour after delivery (N=400 mother-infant Dyads). p<0.001, \*Each component is scored 0-2

## DISCUSSION

This study aimed to identify early breastfeeding problems using the LATCH tool and assess the impact of supportive measures on improving LATCH scores in different mother-infant groups. The data reveal notable improvements across various subgroups post-intervention. At 6-12 hours postbirth, 293 (73.2%) of mother-infant pairs had a poor latch, indicating significant initial difficulties with latching. However, with timely support and training using simple visual aids, this percentage significantly dropped to 14 (3.5%) at 24-48 hours. Improper latching and positioning resulted in the baby sucking only on the nipple, leading to inadequate feeds for the neonate, sore or cracked nipples, and breast engorgement in the mother. The number of mothers with nipple problems, such as flat or inverted nipples, decreased from 44 (11%) to 5 (1.3%) with simple interventions like tactile stimulation or nipple pullers. The 'comfort' component was low in 107 (26.8%) cases, indicating that about a quarter of mothers experienced discomfort during breastfeeding initially, which was decreased to 27 (6.8%) after the intervention. A total

of 346 (86.5%) mother-infant dyads scored low in the audible swallowing component, showing that most infants were not swallowing audibly, which could indicate issues with milk transfer or that the baby was not getting enough milk. At 24-48 hours, the percentage dropped to 98 (24.5%), indicating a noticeable improvement; however, a quarter of the cases still experienced difficulties, which may be due to the lesser quantity of milk produced by mothers on days 1 and 2 after delivery [12,13]. At 6-12 hours, 242 (60.5%) of mothers had difficulty holding their infants correctly. This percentage dropped to 54 (13.5%) at 24-48 hours, indicating that teaching proper holding techniques and positions substantially helped mothers gain confidence and control in breastfeeding.

For infants with birth weights below 2500 g, 212 (88.3%) had LATCH scores below 8 at 6-12 hours, which reduced to 50 (20.8%) at 24-48 hours. For those over 2500 g, the percentage dropped from 132 (82.5%) to 16 (10%). These results suggest that while infants with lower birth weights initially faced more breastfeeding difficulties, targeted support significantly improved their scores. Mothers who had caesarean deliveries experienced more breastfeeding challenges, with 164 (91.1%) having low LATCH scores at 6-12 hours, decreasing to 50 (27.7%) at 24-48 hours. In contrast, for vaginal deliveries, the numbers dropped from 180 (81.8%) to 16 (7.3%). This highlights the greater initial difficulty faced by primiparous and caesarean mothers, which is consistent with findings from other studies [12,13]. Primiparous mothers had a higher incidence of low LATCH scores, with 176 (89.3%) at 6-12 hours, reducing to 48 (24.4%) at 24-48 hours. In multiparous mothers, the scores improved from 168 (82.7%) to 18 (8.8%). This indicates that first-time mothers faced more challenges initially, but supportive measures effectively improved their breastfeeding performance. Mothers aged over 30 had 82 (86.3%) with low LATCH scores at 6-12 hours, decreasing to 22 (23.1%) at 24-48 hours. For mothers aged 21-30, the scores improved from 240 (85.7%) to 26 (9.3%). Younger mothers under 20 showed an improvement from 22 (88%) to 18 (72%), but still faced relatively high difficulty postintervention, indicating a need for more tailored support for this age group. Education level significantly impacted LATCH scores. Among illiterate mothers, 195 (91.9%) had low scores at 6-12 hours, improving to 48 (22.6%) at 24-48 hours. Secondary and high school-educated mothers improved from 103 (81.7%) to 11 (8.7%). For mothers with intermediate education, scores improved from 31 (75.6%) to 5 (1.2%), and for those with graduation and above, from 15 (75%) to 2 (1%). This suggests that higher education levels correlated with better initial breastfeeding outcomes and greater improvements postintervention.

The overall data show a significant reduction in the number of mother-infant pairs with LATCH scores below 8 across all demographic groups from 6-12 hours to 24-48 hours postintervention. This underscores the effectiveness of breastfeeding support, education and training in addressing and resolving early breastfeeding issues. This improvement was attributed to breastfeeding sessions, similar to studies by Divya R et al., and Öztürk R et al., which demonstrated the importance of breastfeeding counselling in improving LATCH scores [11,14]. However, a study by Sroiwatana S and Puapornpong P reported no improvement in LATCH scores even after counselling sessions, which contrasts with the findings of the present study [15]. Previous studies found a significant positive correlation between good LATCH scores in the early postnatal period and exclusive breastfeeding rates both at hospital discharge and at 6-8 weeks postpartum [16-19]. Therefore, it is believed that systematic breastfeeding assessment using the LATCH tool, along with the timely implementation of appropriate interventions, can significantly enhance exclusive breastfeeding rates during and after hospital discharge.

## Limitation(s)

This study has certain limitations. The mother-infant dyads beyond the initial 48 hours were not followed, so breastfeeding issues that may arise later, such as mastitis, breast abscess, overactive milk ejection reflex and plugged ducts, were not assessed. Additionally, neonates requiring NICU admission and late preterm infants, who might have a higher risk of breastfeeding difficulties, were not included in the study. Despite these limitations, the identification and targeted intervention of breastfeeding problems through counselling, education, and support were crucial in improving the scores.

## CONCLUSION(S)

This study indicated that early breastfeeding problems are prevalent, particularly among mothers who are younger, primiparous, less educated, and those who underwent caesarean sections. Using the LATCH score to identify breastfeeding problems and then providing timely supportive interventions can significantly improve outcomes. Hence, this study highlights the importance of providing targeted breastfeeding support in the early postpartum period to enhance breastfeeding success and promote better health outcomes for both mothers and infants. The LATCH score is a simple tool that can be easily used at the bedside as a breastfeeding assessment tool. This study was conducted with a relatively large sample size, which increases the generalisability of the results.

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**ANNEXURE 1**

Name: \_\_\_\_\_ S. No: \_\_\_\_\_ Date: \_\_\_\_\_

Age: \_\_\_\_\_

Sex: \_\_\_\_\_

Address: \_\_\_\_\_

Education: \_\_\_\_\_

Para: \_\_\_\_\_

Gestational age: \_\_\_\_\_

Type of delivery: vaginal/caesarean: \_\_\_\_\_

Sex of baby: \_\_\_\_\_

Latch score: at 6-12 hrs-----48 hrs/at the time of discharge-----

Latch: \_\_\_\_\_

Audible swallowing: \_\_\_\_\_

Type of nipple: \_\_\_\_\_

Comfort: \_\_\_\_\_

Hold: \_\_\_\_\_