Journal of Neonatal Surgery
ISSN(Online): 2226-0439
Vol. 14, Issue 32s (2025)
https://www.jneonatalsurg.com

OPEN ACCESS

Comparision of Latch Score Vs Breast Feeding Self Assessment Scale for Evaluating Breast Feeding Problems -A Prospective Observational Study

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Cite this paper as: Dr. Manne Sai Teja R, Dr. K N Venkateshwara Prasad, (2025) Comparision of Latch Score Vs Breast Feeding Self Assessment Scale for Evaluating Breast Feeding Problems -A Prospective Observational Study. *Journal of Neonatal Surgery*, 14 (32s), 7959-7965.

ABSTRACT

Background: Breastfeeding is vital for neonatal health, yet difficulties during early postpartum often hinder its successful establishment. Tools such as the Breastfeeding Self-Efficacy Scale-Short Form (BSES-SF) and the LATCH assessment are employed to evaluate maternal confidence and breastfeeding technique, respectively. However, comparative data on their effectiveness in clinical practice remains limited.

Objective: To compare the BSES-SF and LATCH scores in identifying early breastfeeding problems and assess their feasibility and acceptability among healthcare providers.

Methods: A prospective observational study was conducted from April 2023 to March 2024 at a tertiary care hospital in India. A total of 187 mothers with term neonates delivered via vaginal birth were included. Exclusion criteria comprised preterm births, NICU admissions, or need for intravenous fluids. BSES-SF and LATCH scores were recorded from <6 hours to Day 5 postpartum. Descriptive statistics, Pearson correlation, and significance testing ($p < 0.05$) were performed using SPSS v22.

Results: Both BSES-SF and LATCH scores showed significant progressive increases over five days (BSES-SF: 31.78 ± 5.87 to 67.19 ± 2.57; LATCH: 4.52 ± 1.19 to 9.59 ± 0.51). However, no significant correlation was found between the two tools at any time point. Healthcare providers reported high usability for both tools, with BSES-SF being easier to apply, while LATCH was more time-efficient (<15 minutes in 59.4% of cases).

Conclusion: Although BSES-SF and LATCH scores both improve with time postpartum, they assess different aspects of breastfeeding. Their lack of correlation suggests a complementary, rather than substitutive, role in clinical assessment. Integrating both tools may enhance early detection of breastfeeding difficulties and guide targeted interventions.

Keywords: *Breastfeeding self-efficacy, LATCH score, maternal confidence, neonatal care, postpartum assessment, breastfeeding outcomes.*

1. INTRODUCTION

Breast feeding is contemplated as an essential intervention to bring down both the infant mortality as well as the under-5 death rate. Even though breastfeeding is a normal process, some moms and babies may have trouble with it, especially in the days after giving birth. Improper breast-feeding technique may lead to poor feeds that cause severe loss of weight, hypernatremic dehydration, jaundice, and having to be hospitalized again. If breast feeding is started early in hospitals and newborns are fed exclusively on breast milk at hospitals itself, then, the chances of continuing breastfeeding alone for the next 6 months are extremely high.

Institutional deliveries are promoted by each and everyone. During the initial hospitalization days health care workers has the opportunity to evaluate breastfeeding, educating mothers on accurate breastfeeding procedures and increase their poise in breastfeeding.(1)

Breast feeding-self efficacy (BFSE) has been identified as a critical aspect that impacts the success of breast feeding throughout the post delivery period. Potential issues associated with breast feeding can be identified earlier if health care personnel ascertain maternal breast-feeding self-efficacy levels throughout the after delivery period. In the early postpartum period, health care professionals should evaluate the adequacy of breast feeding in light of factors such as poor newborn nipple attachment, sluggish suckling by the newborn, a reduction in the regularity of breast feeding, milk duct issues, and parting of the newborn from its mother. It has been documented that the initiation of breastfeeding is correlated with maternal self-assurance and positive intentions to breastfeed. The health care system, in particular, is instrumental in establishment and preservation of BF during the antenatal and early postnatal periods. The BFSE scale can be employed as an identification instrument in initial post-delivery stage to distinguish between moms who are liable to flourish in breast feeding and among who require supplemental interference to confirm its continuance. Assessing BFSE on the first post-delivery day is crucial for the recognition of ladies who are at risk of discontinuing breastfeeding. When a woman has faith in her own abilities, she is more likely to see her breastfeeding efforts as successful and to see positive results. BFSE detection in the early post-delivery period, particularly among low SES women, is expected to facilitate the early identification of potential issues and the prevention of breast feeding interruption. Consequently, the prevention of breast-related complications, the enhancement of maternal-infant attachment, the reduction of neonatal morbidity and mortality, and the early initiation of breast feeding are all beneficial.[2]

Poor lactation is significantly influenced by psychosocial factors. This covers "depression or anxiety during pregnancy, stressful life events during pregnancy and or postpartum and low levels of social supports". Factors that contribute to insufficient or delayed breastfeeding include the mother's body mass index (BMI), the number of children born, the delivery technique, the duration of labor, complications after delivery, and the introduction of prelacteal meals to the baby. Poor attachment, incorrect posture or inadequate baby feeding habits may all cause poor milk transfer.

Excess weight loss over the permitted 10% may cause significant life-threatening problems including hypernatremic dehydration in newborns in addition to hypoglycemia & neonatal jaundice. These in turn lengthens the hospital stay and is a significant factor in readmission.[3]

Nursing attitude is defined as the belief, knowledge, and information ideas that women consistently display in relation to a psychological object allocated to them throughout the development of their nursing behavior. There was evidence that women's BFSE levels, employment status, and family economic adequacy were determinants of their breastfeeding performance.[4]

There are various studies that looked into BSFE scoring and Latch score separately. But there is a dearth of studies that compared the efficacy of both the scores in finding out breast feeding problems. This study was conducted to fill that gap that exists in the comparison of the efficacy of both the scores in finding out the breast-feeding problems. With this study we also tried to find out the factors that can contribute to affecting the feasibility of both the scores in identifying the problems with a health care provider.

2. MATERIALS AND METHODS

Study Design and Setting

This was a prospective observational study conducted at a tertiary level hospital in India. The study period spanned one year, from April 2023 to March 2024. An accompanying female nurse assisted with data collection.

Study Population

The study population comprised mothers of term neonates delivered via normal vaginal delivery at a tertiary level hospital

Inclusion Criteria:

- All mothers of term neonates delivered by normal vaginal delivery at the hospital.
- Mothers who provided informed written consent to participate in the study.

Exclusion Criteria:

- Neonates requiring Neonatal Intensive Care Unit (NICU) admission.
- Neonates born to sick mothers.
- Preterm neonates.
- Neonates requiring intravenous fluids within the first 48 hours of life.

Sample Size Calculation

The sample size was estimated using a correlation coefficient (r) of 0.29 between the Breastfeeding Self-Efficacy Scale-Short Form (BSES-SF) score and the LATCH score, as reported by Emine Gercek et al. (reference would be cited here in an

actual paper). Employing a 99% confidence level and 90% power, a base sample size of 170 subjects was determined using the formula: $N = [(Z\alpha+Z\beta)/C]^2 + 3$, where $Z\alpha = 2.57$, $Z\beta = 1.28$, and $C = 0.5 * \ln[(1+r)/(1-r)] = 0.2986$. Accounting for a 10% non-response rate, a minimum of 187 subjects were included in the study.

Data Collection Methodology

After obtaining informed written consent from the participants, all eligible neonates and their mothers were enrolled. Data were collected using two primary standardized assessment tools:

1. **Breastfeeding Self-Efficacy Scale-Short Form (BSES-SF):** This 14-item questionnaire assessed maternal confidence in breastfeeding. Each item was rated on a 5-point Likert scale, ranging from 'not at all confident' (1 point) to 'very confident' (5 points). All items were positively worded, and their scores were summed to produce a total score ranging from 14 to 70, with higher scores indicating higher levels of breastfeeding self-efficacy. The BSES-SF also collected data on breastfeeding-related problems, including the time of breastfeeding establishment, early neonatal weight loss, number of previous births, type of birth, continuity of exclusive breastfeeding at discharge, and maternal factors like sore nipples.
2. **LATCH Breastfeeding Assessment Tool:** The LATCH charting system provided a systematic and comprehensive method for evaluating mothers' breastfeeding capabilities. This tool consists of five subscales, with each letter of the acronym LATCH denoting a specific area of charting:
    - **L** (Latch): How well the baby attaches to the breast.
    - **A** (Audible Swallows): The number of audible swallows.
    - **T** (Nipple Type): The type of nipple presented.
    - **C** (Comfort): The maternal comfort grade.
    - **H** (Hold): The amount of assistance the mother required when holding her baby to her breast. Each subscale was scored from 0 to 2, yielding a total score of up to 10. A total score below 10 indicated that the mother required breastfeeding support.

Statistical Analysis

Data were entered into a Microsoft Excel data sheet and analyzed using SPSS version 22.0 software (IBM SPSS Statistics, Somers NY, USA). Categorical data were presented as frequencies and proportions. The Chi-square test or Fisher's exact test (for 2x2 tables) was used as the test of significance for qualitative data, with Yates correction applied when Chi-square rules were not fulfilled for 2x2 tables. Continuous data were represented as mean ± standard deviation. Independent t-tests or Mann-Whitney U tests were employed to identify mean differences between two quantitative variables and qualitative variables, respectively. Graphical representations, including bar diagrams, pie diagrams, and scatter plots, were generated using MS Excel and MS Word. Pearson's correlation or Spearman's correlation was performed to determine the correlation between two quantitative variables and qualitative variables, respectively. A p-value (probability that the result is true) of less than 0.05 was considered statistically significant.

3. RESULTS

The initial analysis of participant demographics revealed distinct characteristics of the neonates and their mothers in the study cohort. Male neonates comprised a majority of the study participants (57.8%), with females accounting for 45.2%. Maternal age distribution showed that the largest proportion of mothers belonged to the 26–30 years age group (39.6%), followed closely by those aged 31–35 years (30.5%), and the 20–25 years group (29.9%). In terms of education, most mothers had attained a secondary level (61.5%), while a considerable proportion had primary level education (34.8%). Only a small minority (3.7%) held bachelor's degrees. Regarding maternal health conditions, hypothyroidism was noted in 7.0% of mothers, pre-eclampsia in 3.2%, and leaking PV in 2.1%. Occupationally, the vast majority of mothers were homemakers (90.9%), with daily wage workers and teachers each constituting 3.7%, and ASHA workers comprising 1.6%. The socioeconomic background was predominantly lower-middle class (71.7%), followed by upper-middle class (16.6%), with lower and middle classes each accounting for 5.9%.

Considering marital duration, a significant proportion of mothers had been married for 1–2 years (38.0%), closely followed by those married for 3–4 years (35.8%), and the remainder for more than 4 years (26.2%). Most mothers had one child (48.7%) or two children (41.2%), with smaller percentages having three children (8.6%) or four children (1.6%). The predominant mode of delivery in the study was Lower Segment Cesarean Section (LSCS) (59.4%), followed by vaginal delivery (40.1%), with emergency LSCS being a rare occurrence (0.5%). In this study majority of mothers established breast feeding within 30 minutes (41.2%), followed by 2 hours (31.6%). Initiation of breast feeding within one hour and three hours was almost equally distributed in the study population (Table 1).

Table 1: Time of establishment of breast feeding after delivery

Time of establishment of breast feeding	Frequency	Percentage
30 minutes	77	41.2
1	21	11.2
2	59	31.6
3	21	11.2
4	9	4.8
Total	187	100.0

In this study the weight loss percentage was more in Day 3 (6.63 ± 1.76%), followed by Day 2 (6.49 ± 1.63%), and Day 4 (6.35 ± 1.78%). The weight loss percentage was 5.22 ± 1.71 % in day 1 and 6.01 ± 1.80 % in day 5 of the study. In this study majority of the mothers had exclusive breast feeding (90.4%), while others used formula feed along with direct breast milk (9.6%) (Figure 1).

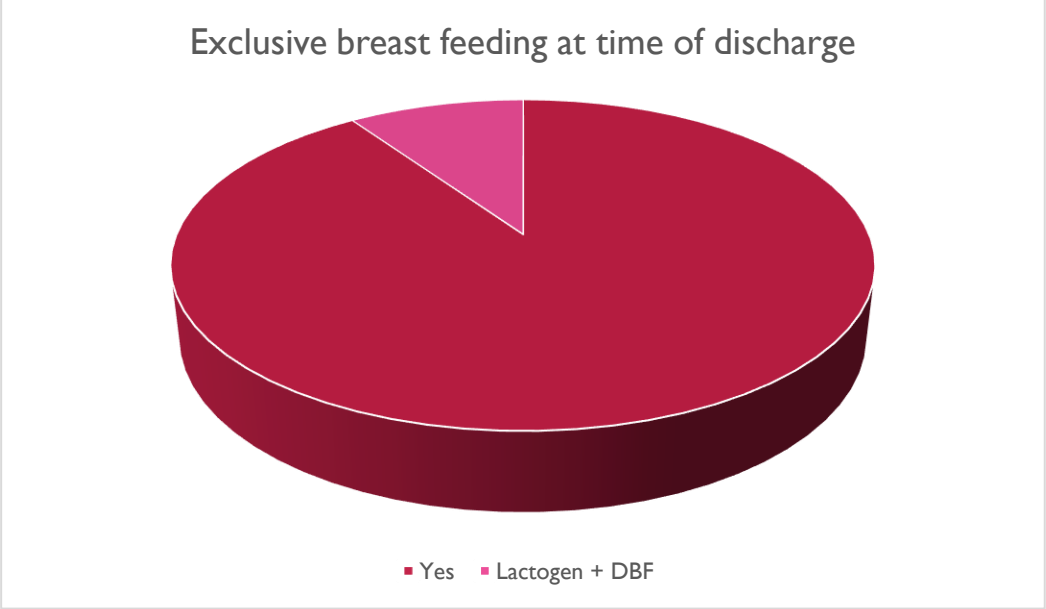

Figure 1: Exclusive breast feeding at time of discharge

The mean scores of the BSES – SF was found to be lower at 6 hours (31.78 ± 5.87) and was found to be highest at day 5 (67.19 ± 2.57). The mean scores at day 2 to day 4 were, 37.35 ± 5.59, 50.66 ± 5.15 and 49.40 ± 3.96 respectively (Table 2).

Table 2: Breast feeding self-efficacy scale short form mean scores

	Mean	SD
<6 hours	31.78	5.87
Day 2	37.35	5.59
Day 3	50.66	5.15
Day 4	49.40	3.96
Day 5	67.19	2.57

The mean LATCH scores were found to be lower at 6 hours (4.52 ± 1.19) and was found to be highest at day 5 (9.59 ± 0.51). The mean scores at day 2 to day 4 were, 6.03 ± 1.39, 8.06 ± 1.33 and 8.44 ± 9.59 respectively (Table 3).

Table 3: Mean LATCH scores

	Mean	SD
<6 hours	4.52	1.19
Day 2	6.03	1.39
Day 3	8.06	1.33
Day 4	8.44	1.13
Day 5	9.59	0.51

The Mean BSES – SF scores and the mean Latch scores increased with increase in days in our study. But in this study there was no significant correlation between mean BFES – SF scores and mean Latch scores (Table 4).

Table 4: Correlation between Breast feeding self-efficacy scale short form and latch scores

	Mean BSES – SF scores	Mean Latch scores	Pearson correlation coefficient	P value
<6 hours	31.78 ± 5.87	4.52 ± 1.19	0.034	0.641
Day 2	37.35 ± 5.59	6.03 ± 1.39	0.101	0.169
Day 3	50.66 ± 5.15	8.06 ± 1.33	0.094	0.198
Day 4	49.40 ± 3.96	8.44 ± 1.13	0.009	0.898
Day 5	67.19 ± 2.57	9.59 ± 0.51	0.046	0.530

In this study 21.9% of the subjects strongly agree and 67.4% of the subjects agree that, using latch score for DBF assessment is easy for health care providers, while 10.7% of the subjects had a neutral opinion on this topic. In this study 29.9% of the subjects strongly agree and 65.8% of the subjects agree that health care workers were willing to use the latch score for DBF assessment in the future, while 4.3% of the subjects had a neutral opinion on this topic (Table 5).

Table 5: Using LATCH score for DBF assessment is easy for health care providers

Using latch score for DBF assessment is easy for health care providers	Frequency	Percentage
Strongly agree	41	21.9
Agree	126	67.4
Neutral	20	10.7
Disagree	0	0
Strongly disagree	0	0
Total	187	100.0

Healthcare providers largely perceived the BSES-SF as an easy tool for breastfeeding assessment (88.8% agreement), with a high willingness for its future use (94.7%). Regarding application time, LATCH scores typically took 10-15 minutes for most subjects (59.4%), with some taking less than 5 minutes (2.1%). The BSES-SF was predominantly completed within the 10–15-minute range (69.5%), indicating a more consistent and slightly quicker application.

Crucially, mothers demonstrated statistically significant improvements in their BSES-SF scores from Day 1 to Day 5 across all assessed self-efficacy aspects ($p < 0.001$ for all items). This included increased confidence in judging milk intake, coping with challenges, breastfeeding without formula, ensuring proper latch, overall satisfaction, continuing breastfeeding when the baby cries, comfortable feeding, identifying hunger, sufficient milk production, comforting the baby at the breast, managing difficult breastfeeding situations, breastfeeding in public, and the desired duration of breastfeeding.

4. DISCUSSION

This study among 187 mothers of term neonates at a tertiary hospital aimed to compare the Breast-Feeding Self-Assessment Short Form (BSES-SF) and LATCH breastfeeding assessment score for early identification of breastfeeding problems. Both mean BSES-SF and LATCH scores increased from less than 6 hours postpartum to day five, though no significant correlation was found between them, contrasting some prior research [5 – 7].

Extensive literature highlights maternal breastfeeding self-efficacy as crucial for favourable outcomes and sustained habits, correlating with prolonged duration and enhanced ability. Self-efficacy is influenced by performance achievements, vicarious experiences, verbal support, and physiological/emotional responses. Positive experiences and encouragement build confidence, while negative states can diminish it. Prior nursing experience, observing others, and early decisions to nurse also contribute to higher self-efficacy. Psychosocial factors profoundly affect competence; interventions like prenatal support and self-efficacy-oriented therapies can significantly enhance it. [8 – 14]

The vital role of healthcare professionals (HCPs)—nurses, midwives, and lactation consultants—through pre- and postnatal support and education, is critical in fostering maternal confidence and promoting early breastfeeding initiation. Research indicates prior nursing experience, higher BSES-SF, and better LATCH scores correlate with earlier and longer breastfeeding duration. However, global data often show delayed initiation, underscoring the need for universal breastfeeding promotion. Additionally, multiparous married women with a history of birth show a preference for exclusive and longer breastfeeding. [15 – 19]

Our study indicated that HCPs found the BSES-SF more user-friendly than the LATCH score for evaluating breastfeeding problems. However, the LATCH score required less application time, which potentially influenced HCPs' inclination towards its use despite the BSES-SF's perceived ease. While both tools aid in early problem detection, their comparative utility in busy clinical settings involves a trade-off between perceived ease-of-use and application speed. This aligns with observations on mothers' lack of knowledge and the need for better nurse-midwife assessment in the early postnatal period.

5. CONCLUSION

In our study, both mean Breastfeeding Self-Efficacy Scale-Short Form (BSES-SF) and LATCH scores improved over time from less than 6 hours postpartum to day five, though no significant correlation was found between them. Both a mother's breastfeeding self-efficacy and her LATCH score significantly impact her ability to sustain exclusive breastfeeding. A decline in LATCH scores postpartum suggests insufficient support, underscoring the importance of early intervention and continued support for correct breastfeeding skills

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