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Original Research Article

A comparative study of two breastfeeding assessment tools: LATCH scoring system and infant breastfeeding assessment tool

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ABSTRACT

Background: Many mothers discontinue exclusive breastfeeding early because of poor latch, perceived insufficient milk, and limited postnatal support. The LATCH scoring system and the Infant Breastfeeding Assessment Tool (IBFAT) are widely used to assess breastfeeding, but comparative data on their value in predicting sustained exclusive breastfeeding are limited.
Methods: This prospective observational comparative study was conducted at M. S. Ramaiah Medical College and Hospital, Bengaluru, from June 2023 to May 2025. A total of 216 postpartum mothers of healthy term singletons were randomly allocated to the LATCH (n=108) or IBFAT (n=108) group. Each mother–infant dyad was assessed at 1 hour, 24 hours, and at discharge. Exclusive breastfeeding was determined by telephonic follow-up at six months. Data were analyzed in SPSS version 25.0 using chi-square, independent t-tests, and logistic regression; $p<0.05$ was considered significant.
Results: IBFAT scores were higher than LATCH scores at all three time points (mean difference approximately −1.9; p=0.001). Exclusive breastfeeding at six months was reported by 76.9% of mothers in the LATCH group and 73.1% in the IBFAT group (p=0.530). The 1-hour IBFAT score was significantly associated with exclusive breastfeeding at six months (p=0.002), whereas the 1-hour LATCH score was not (p=0.114). Scores at 24 hours predicted six-month outcomes in both groups (IBFAT p=0.001; LATCH p=0.02). Discharge scores were not predictive in either group.
Conclusions: IBFAT was more sensitive than LATCH in identifying effective early breastfeeding and predicting sustained exclusive breastfeeding. Routine use of IBFAT within the first 24 hours postpartum may improve early identification of dyads needing lactation support.

Keywords: Breastfeeding, LATCH score, IBFAT, Lactation assessment, Exclusive breastfeeding, Postpartum

INTRODUCTION

Breastfeeding within the first hour and exclusive breastfeeding for six months are central recommendations of the World Health Organization and UNICEF, yet exclusive breastfeeding rates in India and globally remain below target.[1] Early breastfeeding difficulty—ineffective latch, weak suckling, perceived insufficient milk, and maternal discomfort—is one of the most consistent reasons for premature cessation, and is most reversible when identified during the immediate postnatal hospital stay.[2,3] Contemporary obstetric practice favors short postpartum hospital stays, which compresses the window for direct observation of feeding and informal lactation counselling.[4] A structured, objective bedside assessment is therefore needed to triage which dyads will breastfeed successfully on discharge and which need targeted support. Several tools have been validated for this purpose; the two most widely used in Indian practice are the LATCH scoring system and the Infant Breastfeeding Assessment Tool (IBFAT).[5] LATCH scores five components—Latch, Audible swallowing, Type of nipple,

Comfort, and Hold—and therefore combines maternal and infant variables.[6] IBFAT scores four observable infant behaviours—readiness, rooting, fixing/latch, and suckling—and is therefore an infant-centred measure of feeding competence.[7] This conceptual difference matters clinically: components such as maternal comfort or hold position can fluctuate in the early hours after delivery (particularly after caesarean section) without truly reflecting whether the baby is feeding well, whereas suckling vigour and rooting are biologically anchored signals of feeding effectiveness.

Although both instruments are routinely applied in Indian tertiary care, head-to-head data on whether early scores translate into sustained exclusive breastfeeding remain limited.[5,8] Most published comparisons are short-term, end at discharge, and do not link the score to a six-month feeding outcome. The present study was designed to address this gap. The specific objectives were: to assess breastfeeding effectiveness in postpartum mothers using LATCH; to assess the same population using IBFAT; to compare the two tools for their ability to predict continued exclusive breastfeeding at six months; and to identify maternal and neonatal factors associated with feeding scores on either tool.

METHODS

Study design and setting

This was a prospective observational comparative study conducted in the Department of Obstetrics and Gynecology, M. S. Ramaiah Medical College and Hospital, Bengaluru, Karnataka, over a two-year period from June 2023 to May 2025. The institution is a tertiary care teaching hospital with a high-volume obstetric service and a structured postnatal and lactation support pathway, providing an appropriate setting for the comparison.

Participants

Postpartum mothers who delivered a healthy term singleton newborn—by either vaginal route or caesarean section—and who consented to participate and to telephonic follow-up at six months were eligible. The inclusion criteria were maternal age 18-40 years, singleton pregnancy of at least 37 completed weeks of gestation, birth weight of at least 2.0 kg, and absence of significant medical comorbidity. Mothers were excluded if they had a multiple pregnancy, a major medical disorder (including hypertensive disorders of pregnancy, cardiac, renal or autoimmune disease), preterm delivery before 37 weeks, an infant requiring neonatal intensive care unit admission, or were younger than 18 or older than 40 years.

Allocation and assessment

Eligible mothers were allocated to one of two groups using a random-number table: Group I (LATCH scoring system) or Group II (Infant Breastfeeding Assessment Tool, IBFAT). Each mother–infant dyad was assessed by trained postnatal staff at three time points—1 hour postpartum, 24 hours postpartum, and on the day of discharge. The LATCH score evaluates five components (Latch, Audible swallowing, Type of nipple, Comfort, and Hold), each scored 0-2 for a maximum of 10; for analysis, total scores of 0-3 were classified as poor (requiring support), 4-7 as moderately effective, and 8-10 as effective breastfeeding.[6] IBFAT scores four infant behaviours (readiness to feed, rooting, fixing/latching, and suckling) each rated 0-3 for a maximum of 12; total scores of 0-6 were classified as poor, 7-9 as moderately effective, and 10-12 as effective and vigorous feeding.[7]

Data collection and follow-up

Maternal and neonatal information was obtained through interview and review of hospital records, and included maternal age, education, occupation, and parity; mode of delivery (full-term vaginal delivery, elective caesarean or emergency caesarean); gestational age at delivery; neonatal birth weight; and Apgar score at five minutes. At six months postpartum, participants were contacted by telephone to determine whether exclusive breastfeeding had been continued, whether formula or bottle feeds had been introduced and whether weaning had occurred.

Outcomes

The primary outcome was breastfeeding effectiveness, measured as the mean LATCH or IBFAT score at the three assessment points. The secondary outcome was exclusive breastfeeding at six months postpartum, used to evaluate the predictive validity of early postnatal scores.

Sample size and statistical analysis

A total of 216 mother–infant dyads (108 per group) were recruited based on the institutional delivery load during the study period and on previously reported exclusive breastfeeding proportions of approximately 70-80%, allowing detection of a clinically meaningful between-group difference of 15% with 80% power at the 5% significance level. Data were analyzed using SPSS version 25.0 (IBM Corp., Armonk, NY). Continuous variables were summarized as mean and standard deviation and compared using the independent t-test; categorical variables were expressed as frequencies and percentages and compared using the chi-square test. The association between early feeding scores and exclusive breastfeeding at six months was examined using logistic regression. A two-tailed p value of less than 0.05 was considered statistically significant.

Ethical considerations

The study protocol was reviewed and approved by the Institutional Ethics Committee of M. S. Ramaiah Medical College (approval number MSRMC/EC/PG-16/05-2023). Written informed consent was obtained from all

participants before enrolment. The study was conducted in accordance with the principles of the Declaration of Helsinki and applicable national ethical guidelines for biomedical research.

RESULTS

Baseline characteristics

A total of 216 postpartum mothers were enrolled, with 108 each in the LATCH and IBFAT groups. The two groups were comparable for maternal age, employment status, parity, mode of delivery, gestational age, neonatal birth weight, and Apgar score at five minutes (Table 1). The mean maternal age was 29.79±3.71 years in the LATCH group and 29.60±3.56 years in the IBFAT group (p=0.709), with the majority in both groups in the 21-30 age band.

Most mothers were unemployed (62.0% in the LATCH group and 64.8% in the IBFAT group; p=0.160). Parity distribution did not differ significantly between groups (p=0.240). Full-term vaginal delivery was the predominant mode in both groups (50.9% in LATCH; 56.5% in IBFAT; p=0.413), and neonatal birth weight and five-minute Apgar score were also comparable.

Table 1: Comparison of baseline maternal and neonatal characteristics between the LATCH and IBFAT groups.

Characteristics	LATCH (n=108)	IBFAT (n=108)	Test statistic/mean difference	P value
Mean age, years (mean±SD)	29.79±3.71	29.60±3.56	T=0.185	0.709
Unemployed (%)	62.0	64.8	X^2=9.25	0.160
Primiparous (%)	43.5	54.6	X^2=2.85	0.240
Neonatal birth weight, kg (mean±SD)	2.96±0.33	2.97±0.27	−0.007	0.859
Apgar at 5 minutes (mean±SD)	8.42±0.53	8.31±0.82	0.101	0.279

SD: standard deviation. p<0.05 considered statistically significant.

Table 2: Comparison of mean breastfeeding assessment scores between the LATCH and IBFAT groups at each time point.

Time of assessment	LATCH (mean±SD)	IBFAT (mean±SD)	Mean difference	P value
1 hour postpartum	7.30±0.97	9.21±1.18	−1.91	0.001*
24 hours postpartum	8.34±0.89	10.23±1.03	−1.88	0.001*
At discharge	8.84±0.79	10.83±0.94	−1.99	0.001*

LATCH maximum score=10; IBFAT maximum score=12. *Statistically significant at p<0.05.

Table 3: Exclusive breastfeeding status at six months postpartum, by assessment tool group.

Group	Exclusive breastfeeding, N (%)	Not exclusively breastfeeding, N (%)	P value
LATCH (n=108)	83 (76.9)	25 (23.1)	0.530
IBFAT (n=108)	79 (73.1)	29 (26.9)	

Chi-square test; p<0.05 considered significant.

Breastfeeding assessment scores

IBFAT scores were significantly higher than LATCH scores at every assessment time point (Table 2).

At 1 hour postpartum, the mean LATCH score was 7.30±0.97 against an IBFAT score of 9.21±1.18 (mean difference −1.91, p=0.001).

At 24 hours, the corresponding values were 8.34±0.89 and 10.23±1.03 (mean difference −1.88, p=0.001), and at discharge 8.84±0.79 and 10.83±0.94 (mean difference −1.99, p=0.001). Although the two instruments use different total-score ceilings (10 versus 12), the proportional gap in favour of IBFAT was consistent across all three time points, suggesting a systematic difference in what each tool detects.

Exclusive breastfeeding at six months

At six months postpartum, exclusive breastfeeding was reported by 76.9% (n=83) of mothers in the LATCH group and 73.1% (n=79) in the IBFAT group, with no statistically significant difference between groups (p=0.530) (Table 3). Importantly, this similarity in overall six-month outcome was driven by different patterns of early scoring, as detailed below.

Association between early scores and six-month outcome

In the IBFAT group, the score at 1 hour postpartum was significantly associated with exclusive breastfeeding at six months (p=0.002), whereas in the LATCH group the 1-hour score was not (p=0.114). At 24 hours, both tools showed a significant association with six-month exclusive

breastfeeding (IBFAT p=0.001; LATCH p=0.02). At discharge, neither tool was independently predictive of the six-month outcome (p>0.05 for both). The 24-hour assessment therefore appears to be the most informative single time point for both instruments, while the very early (1-hour) assessment is informative only with IBFAT.

DISCUSSION

In this prospective comparison of 216 postpartum mother–infant dyads, IBFAT scored higher than LATCH at every assessment point, and the very early IBFAT score (at 1 hour) was significantly associated with exclusive breastfeeding at six months while the corresponding LATCH score was not. At 24 hours both tools predicted six-month outcomes, but by discharge neither did. The principal inference is not that one tool is universally better, but that the two instruments measure different things at different time-windows, and the choice of tool should follow the clinical question being asked. Baseline maternal and neonatal characteristics were comparable between groups, minimizing confounding from age, parity, mode of delivery, gestational age, and birth weight. The mean maternal age of approximately 29.7 years in both groups is consistent with the 21-30 year age band reported in most Indian institutional series, although somewhat higher than the mean of 25 years described by Halgar et al.[9] Mean birth weight was 2.96 kg in the LATCH group and 2.97 kg in the IBFAT group, comparable to the 2.93 kg reported by Lakshmi et al and consistent with term Indian cohorts.[10]

Unlike studies by Karthika et al (48% caesarean) and Shah et al (78.5% caesarean), full-term vaginal delivery was the predominant mode in our cohort.[11,12] This is relevant because caesarean delivery has been repeatedly associated with delayed lactogenesis, post-operative pain that interferes with positioning, and reduced early skin-to-skin contact, all of which can artificially depress the maternal-side components of LATCH (especially Comfort and Hold) without reflecting the infant's actual feeding competence.[13] The predominance of vaginal deliveries in the present cohort may therefore have flattened the inter-tool difference; in a caesarean-heavy population the gap between IBFAT and LATCH would likely be larger still.

IBFAT scored higher than LATCH at all three time points. Two related reasons are plausible. First, IBFAT is anchored to infant behaviours—readiness, rooting, fixing, and suckling—that mature quickly in healthy term newborns and are visible from the first feed.[7] Second, LATCH incorporates the mother's nipple type, perceived comfort, and hold, which take longer to stabilize and are more susceptible to transient factors such as engorgement, soreness, and the learning curve of positioning in primiparous women.[6] The consequence is that LATCH can record an apparently low score in a dyad whose feeding is actually progressing well, while IBFAT picks up the infant-driven competence early. The differential predictive performance at 1 hour is, in our view, the more clinically actionable finding. A 1-hour IBFAT score significantly tracked with exclusive breastfeeding at six months, whereas a 1-hour LATCH score did not. This is consistent with the conceptual point that infant feeding behaviour at the first feed is already biologically informative, while maternal comfort and positioning at one hour are largely a function of pain, fatigue, and inexperience rather than a true predictor of long-term feeding success. By 24 hours, the maternal-side variables of LATCH have had time to settle and the two tools converge in predictive value; this is consistent with previous comparative work, and supports the 24-hour assessment as the most universally informative single time point.[5] Discharge-day scores were not predictive of the six-month outcome on either tool. This finding is best explained by the timing of discharge in modern obstetric practice rather than by any failure of the tools themselves. Hospital stays after uncomplicated delivery are now typically 48-72 hours, which is before breastfeeding behaviour fully stabilizes; the trajectory over the next one to two weeks at home, shaped by family support, cultural feeding practices, and access to lactation counselling, dominates the six-month outcome.[14] An assessment at the door of the postnatal ward therefore captures less independent information than one at 24 hours when the dyad is still under observation but well past the immediate adaptive phase.

Riordan et al previously highlighted reliability inconsistencies when different breastfeeding tools were applied to the same feeding episode.[15] Rather than undermining the use of such tools, the present findings argue that selection should be matched to the clinical purpose: where the question is early triage of dyads needing intensive lactation support, an infant-anchored tool such as IBFAT is sensitive within the first hour; where the question is documentation of feeding stability before discharge, a 24-hour assessment with either tool performs comparably. The clinical implications of these findings are practical and incremental rather than disruptive. Incorporating an IBFAT assessment at the first feed within one hour of birth, with a repeat assessment at 24 hours, may allow earlier identification of dyads with ineffective latch or weak suckling than the current practice of a single LATCH score at discharge. Such early identification can in turn direct targeted lactation counselling, structured re-demonstration of positioning and attachment, and (where indicated) referral to a lactation consultant before discharge, with the goal of increasing sustained exclusive breastfeeding rates at six months. Strengths of this study include its prospective design, random allocation to the assessment tool, standardized timing of observations, and follow-up to six months postpartum—a longer horizon than most published comparisons. Limitations are that it is a single-center study in a tertiary teaching hospital, that follow-up at six months relied on maternal self-report by telephone (which is susceptible to social desirability and recall bias), and that the predominance of full-term vaginal deliveries may limit generalizability to populations with a higher caesarean rate. The findings should be confirmed in multicenter work that includes more caesarean and high-risk dyads.

CONCLUSION

In this prospective comparison, IBFAT was more sensitive than LATCH at the very early postnatal assessment and was significantly associated with exclusive breastfeeding at six months when applied within the first hour of birth. By 24 hours postpartum, both tools were predictive of the six-month outcome, but neither was predictive at discharge. Routine use of IBFAT at the first feed and at 24 hours, with targeted lactation support for low-scoring dyads, may be a practical way to improve sustained exclusive breastfeeding rates in tertiary obstetric practice.

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