

## LATCH Score for Identification and Correction of Breastfeeding Problems - A Prospective Observational Study

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**Objective:** To determine early breastfeeding problems using LATCH tool, and analyze the impact of breastfeeding supportive measures in improving LATCH score. **Methods:** This prospective study included all inborn term neonates born at our center between September, 2019 and March, 2020. Breastfeeding problems were identified by LATCH score at 6-12h after birth, and were addressed by the study team providing breastfeeding support, education and training to mothers. LATCH scores were reassessed at 24-48h. **Results:** Among 400 mother-infant dyads, 399 (99.7%) required support to position the neonate, 190 (47.5%) had poor latch and 52 (13%) had nipple problems during initial assessment. Breastfeeding supportive measures improved the LATCH score [median (IQR) 7 (5,8) vs 8 (8,8) at 6-12 and 24-48 hours, respectively;  $P < 0.001$ ], and reduced the number of mothers with LATCH score  $< 8$  [288 (72%) vs 63 (15.8%);  $P < 0.001$ ]. **Conclusion:** LATCH is a comprehensive yet simple tool to identify breastfeeding problems. Given the high incidence of breastfeeding problems during early postpartum period, systematic assessment of breastfeeding related problems using LATCH tool can help timely intervention and improvement in the breastfeeding technique.

**Key words:** Breastfeeding support, Counselling, Latching, Neonatal feeding.

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Breastfeeding is considered an important intervention to reduce infant and under-5 mortality [1,2]. Though breastfeeding is a natural process, some mother-infant dyads may have problems in breastfeeding, particularly during the initial days after childbirth [3,4]. Improper breastfeeding technique may result in inadequate feeds leading to excessive weight loss, hypernatremic dehydration, jaundice and re-hospitalization. Evidence suggests that early initiation of breastfeeding and exclusive breastfeeding at hospital discharge are associated with improved rates of exclusive breastfeeding until six months and increased duration of breastfeeding [5].

As we ardently promote institutional deliveries, the initial hospitalization period is a good opportunity for health care workers to assess breastfeeding, educate mothers on correct breastfeeding techniques, and boost their confidence in breastfeeding before discharge from hospital. There is a need for a systematic way to evaluate the breastfeeding technique, identify problems related to breastfeeding and take appropriate corrective actions in a timely manner. In this study, we aimed to determine the incidence and nature of early breastfeeding problems

using LATCH tool [6], and to analyze the impact of breastfeeding support in improving the LATCH score.

### METHODS

This prospective observational study was conducted in a tertiary care neonatal centre from September, 2019 to March, 2020, including all inborn term neonates. The exclusion criteria were neonates who required neonatal intensive care unit (NICU) admission, multiple births and sick mothers where LATCH score could not be assessed within stipulated time. The study was approved by the Institutional Ethics Committee. Informed written consent was obtained from the mother prior to recruitment.

LATCH is an acronym that stands for latch, audible swallowing, type of nipple, comfort and hold [6]. Each component is scored from 0-2 and the total score ranges from 0-10. A total score less than 8 is considered low/unsatisfactory.

LATCH score was assessed at 6-12 hour after birth. The scoring was performed by a group of eight senior nurses (two in each postnatal ward), who had been trained in LATCH score assessment and breastfeeding support,

before commencing the study. The training was provided in multiple sessions using images and videos, and by hands-on training under direct observation by the study investigators. Depending on the problem in breastfeeding that was identified during the initial assessment, counselling, education and support were provided to the mothers by the study team. Mothers were trained in cradle or cross-cradle hold of the baby while breastfeeding. Mothers who had undergone caesarean delivery were taught breastfeeding in side-lying position. Signs of good attachment were explained to the mothers using visual aids. Mothers were encouraged to evaluate and correct the positioning and attachment of the baby by themselves during subsequent feeding sessions, which was supervised by the study team. Tactile stimulation and/or nipple pullers were prescribed to mothers with flat or inverted nipples. Following the interventions, LATCH scores were reassessed at 24-48 hour from the time of delivery. For most mother-infant dyads, both the initial assessment and post-intervention assessment were performed by the same nurse.

Demographic and clinical details of the mother and the baby were collected in a pretested study form. Sample size obtained was 400 mother-infant pairs, assuming a 50% incidence of breastfeeding problems in term neonates, taking precision of 5%.

**Statistical analysis:** Descriptive statistics are presented as median and interquartile range (IQR) or number and percentage, as appropriate. Chi-square test was used to compare categorical data between independent samples, McNemar test for categorical data between paired samples, and Wilcoxon signed rank test for ordinal data between paired samples. All statistical analyses were performed using SPSS 20.0. A *P* value <0.05 was considered statistically significant.

## RESULTS

Among the 400 study neonates, 217 (54.2%) were boys and 19 (4.8%) had a birth weight <2500 g. Nearly half of the mothers (197, 49.2%) were primiparous, and 252 (63%) had delivery by caesarean section. Maternal age was <20, 20-30 and > 30 years in 4 (1%), 290 (72.5%) and 106 (26.5%), respectively. Of these, 29 (7.2%) mothers had high-school education, 342 (85.6%) were graduates and 29 (7.2%) were professionals.

During the initial assessment at 6-12 hour, 399 (99.7%) mothers required support to position the neonate, 190 (47.5%) mother-infant dyads had a poor latch with a score of 0 or 1, and 52 (13%) mothers had a flat or inverted nipple. While 288 (72%) mother-infant dyads had a LATCH score of < 8 at 6-12 hour after delivery, this reduced significantly

**Table I Scores of Individual Components of LATCH scoring System at 6-12 Hour and 24-48 Hour After Delivery (N=400 Mother-Infant Dyads)**

Component	Score		
	6-12 h	24-48 h	<i>P</i> value
Latch	2 (1, 2)	2 (2, 2)	< 0.001
Audible swallowing	1 (0, 1)	1 (1, 2)	< 0.001
Type of nipple	2 (2, 2)	2 (2, 2)	< 0.001
Comfort	2 (2, 2)	2 (2, 2)	0.121
Hold	1 (0, 1)	1 (1, 1)	< 0.001

Scores in median (IQR).

to 63 (15.8%) at 24-48 hour after the breastfeeding support and training (*P*<0.001). The median (IQR) LATCH scores also improved significantly [7 (5,8) vs 8 (8,8); *P*<0.001].

The scores of individual components are given in **Table I**. The 'latch' component improved significantly with 95.5% mother-infant pairs having a score of 2 at 24-48 hour. Though there was improvement in 'audible swallowing' and 'hold' components, the proportion of mother-infant pairs achieving a score of 2 was less even after the training. Most of the mothers had a score of 2 for 'comfort during breastfeeding.' Number of mothers who have a flat or an inverted nipple decreased from 13% to 2.7% after the intervention.

**Table II Comparison of Low Scores (<8) Between Different Sub-groups of Mother-Infant Dyads**

Mother-infant groups (n)	LATCH score < 8	
	At 6-12 h (n=288)	At 24-48 h (n=63)
<b>Birthweight</b>		
< 2500 g (n=19)	14 (73.7)	4 (21.1)
> 2500 g (n=381)	274 (71.9)	59 (21.5)
<b>Delivery</b>		
Cesarean (n=252)	223 (88.5) <sup>a</sup>	51 (20.2) <sup>c</sup>
Vaginal (n=148)	65 (43.9)	12 (8.1)
<b>Parity</b>		
Primipara (n=197)	161 (81.7) <sup>a</sup>	39 (19.8) <sup>d</sup>
Multipara (n=203)	127 (62.6)	24 (11.8)
<b>Maternal age</b>		
>30 y (n=106)	78 (73.6)	19 (17.9)
20-30 y (n=290)	206 (71)	42 (14.5)
<20 y (n=4)	4 (100)	2 (50)
<b>Mother's education</b>		
High school (n=29)	23 (79.3) <sup>b</sup>	9 (31.0) <sup>d</sup>
Graduate (n=342)	239 (69.9)	46 (13.5)
Professional (n=29)	26 (89.6)	8 (27.6)

Values in no. (%). At 6-12 h, <sup>a</sup>*P*<0.001; <sup>b</sup>*P*<0.05; At 24-48 h, <sup>c</sup>*P*<0.001; <sup>d</sup>*P*<0.05.

#### WHAT THIS STUDY ADDS?

- Timely intervention, following early identification of breastfeeding related problems using the LATCH tool, help in significant reduction of such problems.

Analysis of the association between demographic characteristics and LATCH scores showed that caesarean delivery, primiparity and mother's education were risk factors for a lower LATCH score at 6-12 hours (**Table II**). Though, the scores improved significantly after breastfeeding support in all these subgroups, they had persistently lower scores at 24-48 hours when compared to their fellow groups.

#### DISCUSSION

Our study showed that almost all the mothers required assistance in positioning the neonate during breastfeeding and almost half of mother-infant dyads had problems related to latching, with 13% mothers having nipple issues soon after delivery. We found a significant reduction in breastfeeding problems with timely support, training and counselling of mothers.

LATCH score provides a systematic method to evaluate five key components of the breastfeeding technique [6]. It helps to identify the nature of the problem, so that appropriate corrective measures can be taken by counselling and training the mothers with simple visual aids. Improper latching and positioning of the neonate during breastfeeding may result in the baby sucking only on the nipple, which in turn will lead to inadequate feeds to the neonate and sore/cracked nipples and breast engorgement in the mother. We found a significant improvement in nipple problems such as flat or inverted nipples by 24 hours after delivery with simple interventions such as tactile stimulation or nipple puller.

The 'comfort' component had good scores at both 6-12 and 24-48 hours post-delivery, probably because problems causing discomfort while breastfeeding, such as breast engorgement or sore/cracked nipples usually develop later during the postpartum period. 'Audible swallowing' component scored low at both assessments and this is probably due to the less quantity of milk secreted by mothers on day 1 and 2 after delivery. The frequency of audible swallowing improves after the secondary lactogenesis, when mother starts secreting more milk [6].

Primipara mothers who have no previous experience with breastfeeding and mothers who have a caesarean delivery and hence have pain and cannot sit up are more likely to have problems in breastfeeding, as shown by our study and previous studies [6,7]. These subgroups of mothers would require more support to establish breastfeeding.

Better LATCH scores in the early postnatal period were shown to correlate positively with exclusive breastfeeding rates at discharge and at 6-8 weeks of life [8-10]. Hence, we are of the view that systematic assessment of breastfeeding using the LATCH tool and timely initiation of appropriate measures to address the problems that are identified will help to improve exclusive breastfeeding rates at and after hospital discharge.

The study has some limitations. We did not follow the mother-infant pairs beyond 48 hours. Hence, several problems related to breastfeeding that appear later were not assessed. We did not include neonates who required NICU admission and late preterm neonates, who may be at greater risk of improper breastfeeding. We did not assess inter-observer agreement in assessment of the LATCH score among the study nurses. Finally, other factors could also have contributed to the improvement in the LATCH score. Nevertheless, identifying the nature of breastfeeding problem in each mother-infant dyad and addressing the problem through breastfeeding counselling, education and support was undeniably a major factor contributing to the improvement in the scores.

To conclude, the incidence of problems related to breastfeeding is high during the initial days after child birth. LATCH is a comprehensive, yet simple and easy to use tool to identify these problems and guide us to initiate appropriate intervention. Breastfeeding support, counselling and education during the postpartum hospital stay significantly reduce problems in breastfeeding.

*Ethics clearance:* Name of IEC: KMCH Ethics Committee; No. EC/AP/762/08/2019, dated August 24, 2019.

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