Effectiveness of Latch Scores as the Assessment Tool of Breastfeeding : Scoping Review

Esti Rahayu1,\* Herlin Fitriana Kurniawati2, Herlin Fitriani Kurniawati3

1 University ‘Aisyiyah Yogyakarta, Ringroad Barat No.63 Nogotirto Street, Gamping, Sleman, Yogyakarta, 55292, Indonesia

2 University ‘Aisyiyah Yogyakarta, Ringroad Barat No.63 Nogotirto Street, Gamping, Sleman, Yogyakarta, 55292, Indonesia

3University ‘Aisyiyah Yogyakarta, Ringroad Barat No.63 Nogotirto Street, Gamping, Sleman, Yogyakarta, 55292, Indonesia

1 estirahayu2006@gmail.com \*; 2 herlinana@unisayogya.ac.id; 3 herlinani@unisayogya.ac.id

\* corresponding author

Tanggal Submisi: . xxxxxxxx, Tanggal Penerimaan: xxxxxxxx

Effectiveness of Latch Scores as the Assessment Tool of Breastfeeding : Scoping Review

Abstract

Introduction: To find out the success of lactation, an assessment instrument has been developed with the aim of assessing the process of breastfeeding subjectively and objectively. Aim: to find out the effectiveness and weakness of the LATCH score as assessment tool of breastfeeding. Method: Five steps for scoping review were used in this review. Findings: The LATCH score was used effectively as a breastfeeding assessment tool. The LATCH score could assess about attachment, sound of swallowing, the shape of nipple, mother’s comfort level, the position of infant and can predict the duration of breastfeeding.

Keywords: LATCH score, Assessment tools, Breastfeeding techniques

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**INTRODUCTION**

WHO and UNICEF recommend to give optimal nutrition for newborns through a program of exclusive breastfeeding for six months (Heird, 2012). The America Academy of Pediatrics recommends exclusive breastfeeding for babies for a minimum of 6 months and it can be continued at least until the baby is 12 months old. Breast milk is the best nutrition and it is intended specifically for newborns because it consists of various antibody components, complete nutrition and is easily digested by newborns compared to formula milk (Altuntas et al., 2015).

Data related to the number of exclusive breastfeeding from 2013 to 2018 was still very low from the set standards, 43% of newborns who started breastfeeding in the first hour after birth and 41% of babies under the age of six months who received exclusive breastfeeding. Meanwhile, 70% of women still breastfeed their babies until they are one to two years old and the breastfeeding level has decreased until 45% (UNICEF, 2019).

The nutrient content of breast milk is not necessarily found in formula milk, so then the government truly recommends the exclusive breastfeeding due to it has many benefits for the growth and development of infant. Besides, the appropriate breastfeeding process, the infant will get good physical, emotional, and spiritual development in its lives (Wagner et al., 2013). It is contrary to the recommendation of exclusive breastfeeding, data from the Indonesian Demographic and Health Survey shows a decrease in the exclusive breastfeeding coverage rate from 40.3% in 1997 to 39.5% in 2007. In 2012, the coverage of exclusive breastfeeding increased to 42%. and it increased to 52.3% in 2014, but this increase still does not meet with the target of Ministry of Health such as increasing the coverage to 80% by 2014 (Kemenkes RI, 2014).

Postpartum mothers who have just given birth, they usually describe the first few weeks of breastfeeding as a very difficult time, with many unexpected problems that emerge (Wagner et al., 2013). The research conducted by (Tauriska, 2015) reveals that the correct attachment will produce the right suction of infant. If the suction of infant is correct, it will stimulate the hypothalamus which will stimulate the anterior pituitary gland to produce prolactin and the posterior pituitary to produce the hormone oxytocin. If the suction of baby is correct, it will be characterized by rounded cheeks, more areola above the mouth, slow, deep and resting suction, can be heard when the baby swallows. Although the skills of breastfeeding babies can be mastered naturally in every mother, mothers must still understand good and correct techniques during breastfeeding to babies. It is often failure to breastfeed due to the wrong position and placement of the baby.

Several instruments for assessing breastfeeding techniques have been developed for a long time to identify breastfeeding problems. The LATCH score is one of the breastfeeding instruments that is often used because it is simple and assesses Latch, Audible swallowing, Type of nipple, Comfort, and Hold (LATCH) (Altuntas et al., 2014).

RESEARCH METHODS

This review uses a methodology for grouping reviews as suggested by Arksey and O'Malley. The stages carried out in this scoping review consist of: (1) identifying research questions, (2) identifying relevant studies, (3) selecting studies, (4) Data Charting, (5) compiling, summarizing and reporting the results (Arksey & Malley, 2005).

**Identifying Research Questions (Stage 1)**

For this scoping review, the authors focus on the following research questions:

1. Is the LATCH Score effective as a breastfeeding assessment tool?
2. What are the weaknesses of the LATCH score as a breastfeeding assessment tool?

**Identifying relevant studies (Stage 2)**

In conducting a relevant study search, the author uses 3 databases including Pubmed, ScienceDirect and EBSCO by using keywords that the author has identified relating to the topic of scoping review in the search process. The keywords that are the keywords in the search process include (LATCH) OR "LATCH Score") OR "assessment tools") AND "breastfeeding techniques") AND "postpartum women") OR "postnatal women". And add supporting keywords and keywords others that are equivalent words from the main keywords to broaden the search then organize and filter the years on the page such as filtering, namely Abstract, Human and English. In Table. 1 there is a table to identify relevant articles using the following inclusion and exclusion criteria :

|  |  |
| --- | --- |
| ***Inclusion criteria*** | ***Exclusion criteria*** |
| 1. Articles published in English or Indonesian
2. Original Article
3. Documents / reports / draft policies / guidelines from WHO / certain formal organizations
4. Breastfeeding assessment tool
5. Article published in 2000-2019
 | a. Opinion articleb. Letters and book reviewsc. Mother's perception of partner support during breastfeeding  |

Tabel 1. Inclusion criteria and Exclusion criteria

**Study Selection (Stage 3)**

The results of a literature study of 3 data bases, then conducted a thorough title identification of the data based using identified keywords and obtained as many as 537 articles that the authors considered could contribute data related to the results to be achieved by the author. The next step was 537 articles to be screened, to see whether the articles obtained were in accordance with the criteria sought, the authors were oriented to the inclusion and exclusion criteria set out in Table 1. in Diagram 1 *Prism Flow* Chart



Diagram 1. Prism flow chart

**Data Charting (Stage 4)**

8 The selected article is then carried out a critical appraisal process using the Hawker checklist tools. In scoping review, the study quality is not the main concern, but rather in the effort to find the flexibility and informality of the information contained in it, but other studies reveal that the assessment of the quality of articles in a scoping review is actually able to identify fundamental gaps in terms of evidence.

The next step is to collect and sort key information from the selected articles such as Title / Author / Year / Grade, Country, Aim, Type of Research, Data Collection, Participants / Size and Results then described in Table 2.

Charting data from several articles is then taken 8 articles to do charting data. Here is a charting data table 2:

Table 2. Charting Data

| **No** | **Title/Author /Year/Score** | **Country** | **Objective** | **Types of the Research** | **Data colleting technique** | **Participants/Sample size** | **Result** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **1** | *Comparison of the breastfeeding patterns of mothers who delivered their babies per vagina and via cesarean section: An observational study using the LATCH breastfeeding charting system* (Havva Cakmak & Sema Kuguoglu, 2006) [10] | Turkey | To determine the difference in the breastfeeding process between postpartum sectio caesarean and postpartum vaginal mothers. | Quantitative (Prospective Cohort Study) | Introductory Information Form and by using Breastfeeding Charting (LATCH)  | 118 women who underwent cesarean delivery and 82 women who went through vaginal delivery | From the results of the study found that the type of childbirth affects the process of breastfeeding, especially in women who have a cesarean birth, in need of more support and assistance. |
| **2** | *Does the LATCH Score Assessed in the First 24 Hours After Delivery Predict Non-Exclusive Breastfeeding at Hospital Discharge*(Gianluca Tornese, Luca Ronfani, Carla Pavan, Sergio Demarini, Lorenzo Monasta, and Riccardo Davanzo, 2012) [11] | Italia | The aim is to see the correlation between the assessment of breastfeeding techniques which is assessed at 24 hours first with a few hours after giving birth. | Quantitative (Prospective Cohort Study) | Medical records | 299 pairs of mothers and babies  | The breastfeeding assessment tool is an assessment tool capable of assessing mothers and babies who might benefit from national support in certain categories of risk breastfeeding is not exclusive when finished treatment. Future research related to an assessment tools, breastfeeding techniques are able to predict the duration of breastfeeding if done early in life. |
| **3** | *LATCH Score as a Predictor of Exclusive Breastfeeding at 6 Weeks Postpartum: A Prospective Cohort Study* (Sowjanya and Lakshmi Venugopalan, 2018) [12] | India | The study was conducted in January 2016 to June 2016 which aims to predict a 6-week postpartum mother to the degree of exclusive breastfeeding. | Quantitative (Prospective Cohort Study) | LATCH assessment tool | 100 pairs of mothers and chid with gestational age aterm from vaginal delivery. | LACTH is a simple valuation tool that is economical and able to predict numbers and the duration of breastfeeding early in life, especially in areas with limited resources. |
| **4** | *LATCH Scores and Milk Intake in Preterm and Term Infants: A Prospective Comparative Study* (Nilgun Altuntas, Mesut Kocak, Serpil Akkurt, Hasan Cem Razi, and Mehmet Fatih Kislal, 2015) [13] | Turki | This study aims to detect whether premature infants and term infants get breast milk which is sufficient and aims to determine whether the breastfeeding technique assessment tool can detect enough breast milk babies according to age and weight at birth | Quantitative (Prospective Cohort Study) | LATCH assessment tool | 66 nursing mothers (33 premature and 33 term babies) | Characteristics of high LATCH scores ie; 7 to 10. High LATCH scores in premature babies and term infants can detect the amount of milk taken around 50% of the amount expected. However, there are still LATCH scores related to variability in determining the minimum amount and maximum milk taken. |
| **5** | *Predicting Breastfeeding Duration Using the LATCH Breastfeeding Assessment Tool* (Jan Riordan, Diane Bibb, Marsha Miller dan Tim Rawlins, 2001) [14] | Amerika Serikat | The purpose of this study was to determine the length of breastfeeding using the LATCH score assessment tool. | Quantitative (Prospective Cohort Study)  | Data were taken from the medical records of babies who were not treated with intensive care, babies born prematurely, serotonus and twins. | 127 mothers who breastfeed their babies | In the results of the study found there is a correlation between LATCH steps. The LATCH score is useful for factor identifying early cessation breastfeeding. |
| **6** | *Psychometric Evaluation of 5- and 4-Item Versions of the LATCH Breastfeeding Assessment Tool during the Initial Postpartum Period among a Multiethnic Population* (Ying Lau, Tha Pyai Htun, Peng Im Lim, Sarah Ho-Lim, Piyanee dan Klainin-Yobas, 2016) [15] | Singapura | To assess whether the LATCH score breastfeeding assessment tool is able to predict a mother can breastfeed her baby before 6 weeks postpartum and the assessment is carried out by a professional officer when hospitalized. | Cross-sectional | Data is taken from September 2013 to August 2014 in Singapore tertiary hospitals. Criteria for respondents taken were women who gave birth in 2 puerperal wards and were hospitalized. | The number of samples are 907 | The LATCH score can be used by health professionals to assess breastfeeding practice in postpartum mothers. In addition, the validity of the LATCH score has been tested so that it can be used in all populations. |
| **7** | *The LATCH Scoring System and Prediction of Breastfeeding Duration* (Savitri P. Kumar, Roberta Mooney, Linda J. Wieser, dan Suzanne Havstad, 2006) [16] | Amerika Serikat | To determine whether the LATCH score could be used as a predictor of breastfeeding performed by inpatient professional staff at the hospital. | Quantitative (Prospective Cohort Study) | Data was taken from hospital medical record data and conducted interviews on all samples. | The number of samples is 188. Not all mothers who gave birth were breast-fed and hospitalized as samples because many mothers were sent home 24 hours after delivery. | From the results of the study found that there are 66.5% of mothers who breastfeed their babies at 6 weeks postpartum. LATCH scores are higher among women who breastfeed their babies than those who have weaned their babies. If a breastfeeding mother scores a high LATCH score then she is 1.7 times more likely to breastfeed in the first 6 weeks compared than women with lower scores. |
| **8** | *Validity and Reliability of the Infant Breastfeeding**Assessment Tool, the Mother Baby Assessment Tool,**and the LATCH Scoring System* (Nilgun Altuntas, Canan Turkyilmaz, Havva Yildiz, Ferit Kulali, Ibrahim Hirfanoglu, Esra Onal,Ebru Ergenekon, Esin Koc¸ , and Yıldız Atalay, 2014) [8] | Turki  | To evaluate the validity and reliability of a breastfeeding assessment tool. | Cohort study | Postpartum mothers who deliver babies atterm and are not given intensive care. | 46 samples were randomly selected and monitored and then scored simultaneously. | This study had a correlation between the MBA, IBFAT and LATCH breastfeeding assessment tools. The test results of these tools obtained minimum scores on LATCH and IBFAT and maximum scores on LATCH and MBA. |

**Arranging, summarizing and report results (Stage 5)**

 Data extracted from the articles obtained are then organized into several themes. The themes that have been included in the purpose of this article include the effectiveness and weakness of the LATCH score as a breastfeeding assessment tool. From 8 articles that are suitable and of good quality, data extraction is then carried out to find out in detail and classify a number of points from the article, such as the country of research, the purpose of the study, the methods used, and the results or findings of the research conducted. Of the 8 articles selected, 7 articles used the Cohort Prospective research method and 1 article used Cross Sectional.

**RESULTS AND DISCUSSION**

The articles obtained are from developed and developing countries, 3 articles from Turkey, 2 United States, 1 Italy, 1 India and 1 Singapore.

**Figure 1. Country characteristics**

**Finding**

1. Effectiveness of the LATCH score as the assessment tool of breastfeeding

Based on the research (Cakmak & Kuguoglu, 2007) the LATCH score is an effective tool for assessing differences in breastfeeding technique and can plan the management needed (Tornese et al., 2012) LATCH scores can be used by health workers to assess the amount of breast milk a baby drinks and how breastfeeding is given to postpartum mothers so that the assessment is more objective. The study conducted (Riordan et al., 2001) also suggested that the LATCH score could be used to identify nursing mothers who are at risk of early cessation breastfeeding because of sore nipples. The LATCH assessment tool is an effective tool as a simple predictor of breastfeeding duration (Kumar et al., 2006).

The LATCH score is an easy-to-understand, easy and inexpensive tool for objectively testing breastfeeding techniques, especially for areas with inadequate facilities and infrastructure. The LATCH score results can be used as an estimate of the duration of breastfeeding in newborns. If the results of the assessment are low, support and management are needed at home. The results of the assessment can be used to motivate mothers so that they are able to breastfeed exclusively (Sowjanya & Venugopalan, 2018).This is reinforced by research (Altuntas et al., 2014) which conduct research on three breastfeeding assessment tools, namely LATCH, IBFAT and MBA where the results of the LATCH assessment tool are used effectively as a breastfeeding assessment tool.

1. Weaknesses of the LATCH score as the assessment tool of breastfeeding

Research (Lau et al., 2016) argue that the specificity or accuracy of the LATCH score is low on the comfort level of the mother while breastfeeding and the position of the baby, however it has a high sensitivity value which can be used to predict non-exclusive breastfeeding. Another weakness is in the research conducted by (Altuntas et al., 2015) which argue that the LATCH score cannot be used in premature babies due to its variability, thus, it can interfere with the assessment process because there are other factors that can affect it such as the strength of the tongue and mouth in breastfeeding.

**Discussion**

The LATCH score is one of the most popular of lactation assessment instruments, this breastfeeding assessment tool was invented in 1994 in the United States by a nurse named Deborah Jensen and her team, their aim was to design this instrument to document the assessment of breastfeeding systematically (Jensen et al., 1994). Until now, relatively few studies have examined the effectiveness of the LATCH score, including the articles discussed in this scoping review.

1. Effectiveness of the LATCH score as the assessment tool of breastfeeding

Breastfeeding provides many short-term and long-term benefits for mother and child. Even though, breastfeeding is the duty of mother, the successful breastfeeding can be a complex task for both mother and baby in which the motivation and comfort affect the sustainability of breastfeeding. Increasing breastfeeding promotion and support in maternity facilities and implementing the Baby-Friendly Hospital Initiative (BFHI) program and implementing the LATCH score can be an effective intervention, this is related to health professionals who will assist the breastfeeding mothers and it also needs an assessment of the LATCH score due to this aspect is truly associated with the success of breastfeeding practice (Tornese et al., 2012). In addition, research (Sowjanya & Venugopalan, 2018) also states that the LATCH charting system is effective for breastfeeding assessment tools because of its simplicity in documentation and easy communication, in addition, the LATCH score is effective in predicting the success rate of exclusive breastfeeding that given at the time of newborn baby at hospitalization and it is continued to 6 weeks postpartum.

Breastfeeding is needed in the process of child growth and development. One of the ways in the world to prioritize breastfeeding is by promoting and providing support to breastfeeding mothers. The results of an objective assessment of breastfeeding can be used as a solution to achieve successful breastfeeding practice, one of the important factors is involved in the success of breastfeeding, namely attachment, which is a factor in the LATCH breastfeeding assessment tool (Sowjanya & Venugopalan, 2018). Another study conducted by (Altuntas et al., 2015) regarding the frequency of breastfeeding in preterm and term infants using the LATCH score assessment tool found that if the score is more than 7 then the baby is breastfeeding approximately half of the expected amount of milk. Thus, from this study, the LATCH score assessment tool is effective in the use of preterm and term infants.

The LATCH score is also the second best of breastfeeding assessment tool after the Infant Breastfeeding Assessment Tools (IBFAT). However, many studies use the LATCH score compared to the IBFAT although the LATCH score ranks in the second, this is related to the conciseness of the assessment tool rather than the IBFAT score which is a tool developed to measure the breastfeeding behavior of term infants who have difficulty breastfeeding (Altuntas et al., 2015).

1. The Weaknesses of the LATCH score as a breastfeeding assessment tool

 The score of LATCH cannot be used in preterm infants due to its variability. This is influenced by the unpredictable condition of the infants because there are other factors that may hinder the assessment of the breastfeeding process, such as the strength of the tongue and mouth in breastfeeding, thus, it is not necessary to assess the breastfeeding process to see the duration of breastfeeding for preterm infants (Altuntas et al., 2015). In addition, the LATCH score has a weakness in the point of Comfort (the comfort level of teacher) and Hold (the position of infant) because these points require questions deeply to assess (Lau et al., 2016). According (Altuntas et al., 2015) the LATCH score cannot be used in infants and mothers who are undergoing intensive care.

# CONCLUSION

LATCH scores are used effectively for nursing practice assessment systems because they are systematic, can detect weaning early, are easy to use, concise, and cost-effective. The results showed that the LATCH score was effectively used for assessment tools for breastfeeding practice and also the LATCH score was the second best breastfeeding assessment tool after the IBFAT (Infant Breastfeeding Assessment Tools) for its effectiveness so that many studies used the LATCH score as a breastfeeding assessment tool compared to other assessment tools although has second place. Where the LATCH score is made with the aim to document the systematic and objective assessment of breastfeeding practices. LATCH scores can be used to assess breastfeeding practices for mothers who give birth vaginally or in caesarean section and also for term babies or premature babies. However, to assess the duration of breastfeeding in premature babies is not recommended.

# REFERENCES

Altuntas, N., Kocak, M., Akkurt, S., Razi, H. C., & Kislal, M. F. (2015). LATCH scores and milk intake in preterm and term infants: a prospective comparative study. *Breastfeeding Medicine: The Official Journal Of The Academy Of Breastfeeding Medicine*, *10*(2), 96–101. https://doi.org/10.1089/bfm.2014.0042

Altuntas, N., Turkyilmaz, C., Yildiz, H., Kulali, F., Hirfanoglu, I., Onal, E., Ergenekon, E., Koç, E., & Atalay, Y. (2014). Validity and reliability of the infant breastfeeding assessment tool, the mother baby assessment tool, and the LATCH scoring system. *Breastfeeding Medicine: The Official Journal Of The Academy Of Breastfeeding Medicine*, *9*(4), 191–195. https://doi.org/10.1089/bfm.2014.0018

Arksey, H., & Malley, L. O. (2005). *SCOPING STUDIES: TOWARDS A METHODOLOGICAL FRAMEWORK*. 19–32.

Cakmak, H., & Kuguoglu, S. (2007). Comparison of the breastfeeding patterns of mothers who delivered their babies per vagina and via cesarean section: an observational study using the LATCH breastfeeding charting system. *International Journal Of Nursing Studies*, *44*(7), 1128–1137. http://search.ebscohost.com/login.aspx?direct=true&db=mnh&AN=16839557&site=ehost-live

Heird, W. C. (2012). Infant Nutrition. *Present Knowledge in Nutrition: Tenth Edition*, 624–636. https://doi.org/10.1002/9781119946045.ch40

Jensen, D., Wallace, S., & Kelsay, P. (1994). LATCH: a breastfeeding charting system and documentation tool. *Journal Of Obstetric, Gynecologic, And Neonatal Nursing: JOGNN*, *23*(1), 27–32. http://search.ebscohost.com/login.aspx?direct=true&db=mnh&AN=8176525&site=ehost-live

Kumar, S. P., Mooney, R., Wieser, L. J., & Havstad, S. (2006). The LATCH scoring system and prediction of breastfeeding duration. *Journal Of Human Lactation: Official Journal Of International Lactation Consultant Association*, *22*(4), 391–397. http://search.ebscohost.com/login.aspx?direct=true&db=mnh&AN=17062784&site=ehost-live

Lau, Y., Htun, T. P., Lim, P. I., Ho-Lim, S., & Klainin-Yobas, P. (2016). Psychometric Evaluation of 5- and 4-Item Versions of the LATCH Breastfeeding Assessment Tool during the Initial Postpartum Period among a Multiethnic Population. *Plos One*, *11*(5), e0154331–e0154331. https://doi.org/10.1371/journal.pone.0154331

RI, K. (2014). *Profil Kesehatan Indonesia 2014*.

Riordan, J., Bibb, D., Miller, M., & Rawlins, T. (2001). Predicting breastfeeding duration using the LATCH breastfeeding assessment tool. *Journal Of Human Lactation: Official Journal Of International Lactation Consultant Association*, *17*(1), 20–23. http://search.ebscohost.com/login.aspx?direct=true&db=mnh&AN=11847847&site=ehost-live

Sowjanya, S. V. N. S., & Venugopalan, L. (2018). LATCH Score as a Predictor of Exclusive Breastfeeding at 6 Weeks Postpartum: A Prospective Cohort Study. *Breastfeeding Medicine: The Official Journal Of The Academy Of Breastfeeding Medicine*, *13*(6), 444–449. https://doi.org/10.1089/bfm.2017.0142

Tauriska, T. A. (2015). Hubungan Antara Isapan Bayi dengan Produksi ASI pada Ibu Menyusui di Rumah Sakit Islam Jemursari Surabaya. *Jurnal Ilmiah Kesehatan*, *8*(1), 15–21.

Tornese, G., Ronfani, L., Pavan, C., Demarini, S., Monasta, L., & Davanzo, R. (2012). Does the LATCH score assessed in the first 24 hours after delivery predict non-exclusive breastfeeding at hospital discharge? *Breastfeeding Medicine: The Official Journal Of The Academy Of Breastfeeding Medicine*, *7*(6), 423–430. https://doi.org/10.1089/bfm.2011.0120

UNICEF, W. and. (2019). *Increasing Commitment To Breastfeeding Through Funding and Call To Action Priorities*. 2017–2019. https://apps.who.int/iris/bitstream/handle/10665/326049/WHO-NMH-NHD-19.22-eng.pdf?ua=1

Wagner, E. A., Chantry, C. J., Dewey, K. G., & Nommsen-Rivers, L. A. (2013). Breastfeeding concerns at 3 and 7 days postpartum and feeding status at 2 months. *Pediatrics*, *132*(4), 865–875. https://doi.org/10.1542/peds.2013-0724