








EVALUATION OF THE PERFORMANCE OF NURSING MOTHERS AND NEWBORNS DURING FEEDINGS IN THE NEONATAL PERIOD: A COMPARATIVE STUDY

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ABSTRACT

Objective: to evaluate the performance of nursing mothers and newborns, during breastfeeding, in the neonatal period and to identify the difficulties for the practice of breastfeeding/breastfeeding. **Method:** longitudinal, comparative study, carried out in a regional hospital, in Piauí, Brazil. Forty-nine nursing mothers participated, approached on the first and 28th day of life of their newborns. The collection took place between September 2018 and February 2019, with a characterization questionnaire and application of the LATCH - Scoring System instrument (Latch, Audible swallowing, Type of nipple, Comfort, Hold). For analysis, descriptive statistics and multiple association tests were used. **Results:** It was found that in the first assessment, 32.7% of the nursing mothers and newborns needed support for adequacy of the breastfeeding process, while in the second, only 2%. **Conclusion:** It was evidenced that early interventions aimed at promoting and maintaining breastfeeding should be implemented by nurses, beginning in the prenatal period and indispensable in the first puerperal week, especially those related to breastfeeding technique.

DESCRIPTORS: Breast Feeding; Infant, Newborn; Nursing Care; Early Weaning; Child Health.

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INTRODUCTION

The benefits of Exclusive Breastfeeding (EBF) are widely documented, and current evidence reinforces the relevance of this process for children up to six months of age, highlighting: reduced risk of respiratory and gastrointestinal tract infections, allergies, sudden infant death syndrome; protection against overweight, obesity and development of type 2 diabetes in childhood and later in life. Among mothers, the main benefits include lower risk of hypertension, cardiovascular disease, and type 2 diabetes, as well as breast and ovarian cancer⁽¹⁻²⁾. However, worldwide, 63% of children are not breastfed during this period, which shows low breastfeeding rates⁽³⁾. In Brazil, only 41% of children in this age group are exclusively breastfed, with a median duration of 54.1 days⁽⁴⁾.

Several risk factors may predispose mothers to stop breastfeeding early: delay in latching on; flat or inverted nipples⁽⁵⁾; pain associated with breastfeeding⁽⁶⁾, as well as social factors, such as young mothers with low education⁽⁷⁾.

The ineffective breastfeeding technique, which makes sucking and emptying difficult, can cause damage to the dynamics of milk synthesis and problems such as engorgement and mastitis, which are among the main factors associated with the interruption of EBF⁽⁸⁾. In this context, early detection of difficulties related to breastfeeding favors the identification of binomials predisposed to early weaning, establishing the need to implement strategies for support, guidance, and care⁽⁹⁾.

In view of this, the possibility of evaluating the performance of nursing mothers and newborns (NB) during breastfeeding in the neonatal period, based on longitudinal observation, can contribute to identify possible impediments to the breastfeeding process.

Thus, the hypothesis of the study was that the assessment of the performance of nursing mothers and newborns during feeding would present higher scores in the LATCH - Scoring System score (Latch, Audible swallowing, Type of nipple, Comfort, Hold) on the 28th day compared to the first day of life of the NB.

Thus, the objective was to evaluate the performance of nursing mothers and newborns during breastfeeding in the neonatal period, as well as to identify the difficulties in the practice of lactation/breastfeeding.

METHOD

This was a longitudinal and comparative study, conducted in a regional hospital, in Piauí, Brazil. Data collection occurred between September 2018 and February 2019.

Nursing mothers who were approached on the first day (Rooming-in Accommodation) and on the 28th day of life of the NB (residence), selected to compose the historical Control Group (CG), constituted before the Experimental Group (EG) and that will serve as a comparison in the development of the macro study named "Effectiveness of an educational intervention by telephone in the promotion of breastfeeding in the neonatal period", participated in the research. Thus, the results of this study refer only to the CG, which received no intervention.

Inclusion criteria were age 18 years or older; being a resident in the urban area; being able to read, due to the need to maintain homogeneity between the CG and EG, which will receive an educational intervention involving the reading of telephone messages; being in the immediate postpartum period (minimum of 12 hours), breastfeeding exclusively.

Excluded were nursing mothers with complications during labor and postpartum; with children born with disabilities that prevented them from breastfeeding; or those admitted to the Neonatal Intensive Care Unit.

For sample calculation, the formula for comparison of effectiveness between groups (control and intervention)⁽¹⁰⁾ was used, considering the prevalence of EBF of 43.7%⁽⁴⁾ and number of live births of 936⁽¹¹⁾. It was indicated the need to include 31 nursing mothers for each group, totaling 62 participants. Because it was a longitudinal study, with the possibility of losing participants, the sample was increased by 20%. Therefore, 98 nursing mothers participated and were divided into two groups, and the historical CG, presented in this study, totaled 49 participants.

The discontinuity criteria were nursing mothers who were not located after four telephone contacts on different days and times; who were not breastfeeding (BF) on the 28th day postpartum; and who, despite agreeing to participate in the first stage of the study (at the Rooming-in Accommodation), refused in the second (residence).

The nursing mothers were randomly approached at the AC (Rooming-in Accommodation), where the study proposal was presented and the need for a new meeting was emphasized, at the participant's home, at 28 days postpartum. Telephone contacts (at least two) and address were recorded for scheduling. For data collection, the following instruments were used: 1st - form for socio-demographic, economic and obstetric data; 2nd - form for the characterization of breastfeeding indicators (applied on the 1st and 28th day of life of the NB); and 3rd - LATCH - Scoring System instrument, with the objective of documenting the evaluation of breastfeeding (BF) (applied on the 1st and 28th day of life of the NB).

Each letter of the acronym LATCH represents a characteristic: L (Latch) - quality of the child's latch on the breast; A (Audible swallowing) - possibility of hearing the infant's swallowing while breastfeeding; T (Type of nipple) - type of nipple; C (Comfort) - comfort level of the mother regarding the breast and nipple; and H (Hold) - help to position the child⁽¹²⁾. When applying this instrument, it is possible to establish scores from zero to 10, in which each of the five components receives a numerical score of zero, one or two, representing the same form of the Apgar score. It is established that a score of seven or less indicates the need for intervention/support by the healthcare team, while scores of eight, nine or 10 indicate little or no intervention/support⁽¹³⁾.

Subsequently, a telephone contact was made between 15 and 25 days postpartum with each nursing woman to schedule the date (28th day postpartum) and time for the second field stage, when the 2nd and 3rd instruments were applied again.

The results were analyzed in descriptive statistics (means, standard deviation, and frequency). Multiple association tests were used (Fisher's exact test, McNemar's test), with a 5% significance level and 95% confidence interval.

Approval was obtained from the Research Ethics Committee of the Amílcar Ferreira Sobral Campus of the Federal University of Piauí, according to opinion number 2.756.260.

RESULTS

Forty-nine nursing mothers participated, with a mean age of 26.47 years (± 6.67), mostly between 18 and 30 years, $n=32$ (65.3%). As for marital status, 27 (55.1%) were married and/or in a stable union. Most of them were brown-skinned, $n=27$ (55.1%); had incomplete high school education, $n=29$ (59.2%); had no paid job, $n=38$ (77.6%); and family income below one minimum wage, $n=27$ (55.1%).

About the obstetric profile, it was observed that 31 (63.3%) nursing mothers had gestational age (GA) between 39 and 42 weeks (mean 38.88 weeks), standard deviation of (± 1.68), 41 (83.7%) delivered by surgery/cesarean section, and 48 (98%) had prenatal care. Immediately after birth, 37 (75.5%) reported that the NB was not breastfed, and 26 (53.1%) had no skin-to-skin contact. Moreover, 25 (51%) had not breastfed their previous children.

All participants were on EBF in the first stage of the study, which was defined as an inclusion criterion. In the second assessment, it was found that of the 49 nursing mothers, 45 (91.8%) had EB, three (6.1%) had mixed EB, and one (2%) had predominant EB.

Regarding the evaluation of the classification of the performance of nursing mothers and NBs in the breastfeeding process, it was found in the first evaluation that 16 (32.7%) needed intervention/support by the health team, unlike the second, which identified one participant (2%). Moreover, for the comparative analysis between the two stages, performed using the McNemar test, it was obtained a p-value less than 0.001. This result indicates a significant difference between the stages, indicating a change in the proportions of the classifications between the first and second stages, as shown in Table 1.

Table 1 - Analysis of comparison of proportions of the LATCH instrument on the evaluation of the performance of the breastfeeding process at birth (between 12 and 72 hours after birth) and at the end of the neonatal period (28 days postpartum). Floriano, PI, Brazil, 2020

Variables	Moments		p-value ¹
	1 st Stage n (%)	2 nd Stage n (%)	
Need for intervention/support (LATCH score less than or equal to 7)	16 (32,7)	1 (2)	<0,001
Little or no intervention/support (LATCH score 8, 9 or 10)	33 (67,3)	48 (98)	

¹McNemar's test

Source: Authors (2020)

Table 2 presents the data regarding the assessment of the performance of nursing mothers and NBs during breastfeeding, by assessment item of the LATCH instrument.

Table 2 - Evaluation of the performance of the breastfeeding process at birth (between 12 and 72 hours after birth) and at the end of the neonatal period (28 days postpartum), according to the LATCH instrument. Floriano, PI, Brazil, 2020 (continues)

Variable	Moments					
	1 st Stage			2 nd Stage		
	0 n (%)	1 n (%)	2 n (%)	0 n (%)	1 n (%)	2 n (%)
Latch (L)	7 (14,3)	13 (26,5)	29 (59,2)	0	1 (2)	48 (98,0)

Audible swallowing (A)	6 (12,2)	17 (34,7)	26 (53,1)	0	1 (2)	48 (98,0)
Type of nipple (T)	1 (2)	15 (30,7)	33 (67,3)	0	1 (2)	48 (98,0)
Comfort (C)	0	5 (10,2)	44 (89,8)	1 (2)	8 (16,4)	40 (81,6)
Hold (H)	2 (4,1)	13 (26,5)	34 (69,4)	0	0	49 (100)

Source: Authors (2020)

Regarding the Latch (L), an increase in the percentage of the ideal score (2 - grasps the breast/lower tongue/lips curved outward/rhythmic sucking) from 29 (59.2%) in the first stage to 48 (98%) in the second stage was identified. Similarly, the variable audible swallowing showed significant improvement from one stage to another (score 2 - spontaneous and intermittent for infants less than 24 hours old and spontaneous and frequent for those older than 24 hours), going from 26 (53.1%) to 48 (98.8%). As for the type of nipple (T), it was evident that in the first stage a considerable part of the nursing mothers had inverted or flat nipples, one (2%) and 15 (30.7%), respectively. In the second stage, there was a relevant increase in score 2 (protruded) of 48 (98%).

Regarding comfort, at first, none of the nursing mothers presented severe discomfort in the breasts, however, in the second stage, it was found that one (2%) fitted this assessment, and a significant quantity still had at least mild to moderate discomfort, 40 (81.6%). The variable Neck/Positioning (H) showed that in the first stage, 34 (69.4%) of the nursing mothers had difficulty positioning the NB during breastfeeding, while in the second stage, 49 (100%) were able to position it without assistance.

In Table 3, it was also found that the nursing mothers presented a reduction of difficulties in the breastfeeding process throughout the neonatal period. In the first stage, 26 (53.1%) reported some difficulty, while in the second stage, nine (18.4%) identified problems. In the first stage, the problems related to the delay in "milk letdown" stood out, 14 (28.6%). In the second stage, the presence of pain in the nipples/hurt nipples was evidenced, nine (18.4%). For the association study, considering whether EBF was performed on the 28th day after birth, using Fisher's exact test, a significant association was found between the perception of the nursing mother about the difficulties in breastfeeding and the presence of pain in the nipples or bruised nipples and the non-performance of EBF in the second stage.

Table 3 - Prevalence of difficulties in the breastfeeding process at birth and at the end of the neonatal period, according to the realization of Exclusive Breastfeeding at the end of the neonatal period. Floriano, PI, Brazil, 2020 (continues)

Variable	1 st Stage		2 nd Stage	
	n (%)	p-value ¹	n (%)	p-value ¹
Were there difficulties in breastfeeding during the neonatal period	26 (53,1)	0,612	9 (18,4)	0,001
Delay in the "milk let-down"	14 (28,6)	0,065	1 (2)	0,082
A newborn who does not suck or sucks poorly	13 (26,5)	1	1 (2)	0,082
Flat or inverted nipples	13 (26,5)	0,284	0	-
Nipple pain / bruised nipples	6 (12,2)	1	9 (18,4)	0,001
Not enough milk	6 (12,2)	0,068	1 (2)	0,082

Breast engorgement	1 (2)	1	0	-
Abnormal milk ejection reflex	1 (2)	0,068	0	-

Source: Authors (2020)

DISCUSSION

The participants' profile indicated an average age below 30 years, which may be associated with higher risk of early weaning^(6,14-15). Regarding marital status, most were married, which is a positive factor in the breastfeeding process, since single mothers usually have greater difficulty in maintaining EBF^(6,16). Regarding ethnicity, most reported being brown. This finding corroborates another study on breastfeeding developed in the Northeast Region of Brazil⁽¹⁷⁾, which, according to the Brazilian Institute of Geography and Statistics (IBGE), in the National Continuous Household Sample Survey for the 1st quarter of 2020, presents most of the brown population (64.3%)⁽¹⁸⁾.

Regarding the level of education, most of the nursing mothers had incomplete high school education. Due to the association between low education and little knowledge, there may be an increase in difficulties in the breastfeeding process⁽¹⁹⁻²⁰⁾. Regarding the performance of paid activities, most said they did not work outside the home, configuring it as a protective factor for the breastfeeding process, because they do not need to be away from the child for work⁽²¹⁾.

Most participants had low family income, less than one minimum wage. This variable expresses a protective factor for the process of breastfeeding, since, in low- and middle-income countries, breastfeeding is one of the few positive behaviors related to health, being less frequent in wealthy people^(3,15,21).

As for the obstetric characterization, it was found that most of the nursing mothers delivered with a GA between 39 and 42 weeks, representing a protective condition for breastfeeding, since children born at term have significantly higher chances of timely breastfeeding than premature NB⁽¹⁹⁾. Regarding the type of delivery, cesarean delivery prevailed over vaginal delivery, which has a protective effect against delays in initiating breastfeeding⁽²²⁾.

Regarding prenatal care, almost all the nursing mothers had consultations, which is a preventive factor for early weaning, since encouraging pregnant women to breastfeed can help in the implementation and maintenance of this practice⁽²³⁻²⁴⁾.

In this study, the surgical procedure may have influenced the low prevalence of breastfeeding in the first hour of life, as well as the early skin-to-skin contact between mother and NB, corroborating research that identified cesarean section as a risk factor more strongly associated with late initiation of breastfeeding^(22,25). Regarding having breastfed in previous pregnancies, most reported not having done so, indicating the need to offer more support to these women⁽²³⁻²⁴⁾, since previous breastfeeding experience is positively associated with early initiation and duration of EB⁽²⁶⁾.

We found a high rate of EBF at the end of the neonatal period, like a study conducted in 2013, which identified a 95% probability of EBF at the end of the first month⁽²⁷⁾. We also verified an overall satisfactory performance in the breastfeeding process, with an increase in the percentage from the first to the 28th day of life. Moreover, the comparison between the stages indicated a significant difference, allowing us to verify that the performance of nursing mothers and newborns in the breastfeeding process improves over time, and that the mean indices of self-efficacy and satisfaction in breastfeeding increase considerably⁽⁶⁾.

In the specific evaluation, it was identified that in relation to the variable L, the significant improvement between the stages may be related to the fact that inadequate latch is one of the problems that appears earlier in the breastfeeding process⁽⁶⁾.

Regarding the variable Audible Swallowing (A), it is inferred that the improved performance of this item is concomitantly related to the nurse's familiarization with the act of breastfeeding and the improved performance of the variable latching, since one is a consequence of the other. The foundation for successful breastfeeding lies in the correct latching and swallowing, which depend on correct sucking technique and feedings on a free schedule; frequency and duration of sucking determined by the NB; and the correct position at the breast⁽²⁸⁾.

The analysis of the variable Nipple Type (T) showed that in the first stage a considerable part of the nursing mothers had inverted or flat nipples. In the second stage, an increase in protruding nipples was observed. It is inferred that this anatomical change is related to the fact that the nipple was stimulated during breastfeeding, associated with the better performance observed in the variables handle and positioning, preventing lesions⁽²⁸⁾.

Despite this, in the first stage, none of the nursing mothers presented severe discomfort in the breasts. However, in the second stage, one participant fell into this evaluation, and a significant quantity presented at least mild to moderate discomfort. It is also noteworthy that this was the only variable that had a reduction in the evaluation of the scores.

There are numerous causes of breast pain, making careful history taking and physical examination indispensable for both mother and NB. The results suggest the need for more emphasis on educating mothers about correct positioning and latching during the first weeks after birth to avoid breast trauma and pain. However, it should be noted that corrections in positioning and latching are not always sufficient, and it is necessary to investigate other factors that contribute to nipple pain, such as palate abnormalities, insufficient milk supply and infections⁽²⁹⁾.

The evaluation of the variable Neck/Positioning (H) indicated that, in the first stage, this difficulty was minimal. In the second stage, all the nursing mothers acquired self-confidence and were able to position the NB without help. This data is important, since the incorrect positioning of mother and child during breastfeeding (BF) is associated with early weaning⁽²⁸⁾.

It was found that the nursing mothers had greater difficulties with breastfeeding in the first stage, which directly influenced the performance of this process. For them, the main problem was the delay in the "milk let-down", however, this is generally not a physiological problem and can occur a few days after birth. Still, it is noteworthy that the prevalence of this factor may be related to the high number of cesarean sections that hinder breastfeeding, either because of pain and/or post-anesthetic effect or placental immaturity when the mother is submitted to elective delivery without natural induction⁽²²⁾.

In the second stage, the difficulty reported by nursing mothers was the presence of pain in the nipples/hurt nipples, which was associated with not performing EBF at the end of the neonatal period. Breastfeeding pain can trigger difficulties in breastfeeding management and influence the establishment and maintenance of this process⁽⁵⁾. A research conducted in a hospital in Porto Alegre-RS identified that mothers who presented this difficulty breastfed exclusively for a shorter time⁽⁹⁾.

The study has among its limitations the sample size and the exclusive collection of data from a single hospital, which restrict the generalizability of the findings. Furthermore, the participants had similar socioeconomic status, which establishes that the results pertain only to a specific subset of the population. For this reason, further research is needed to examine correlations between LATCH scores in the postnatal period, especially after the neonatal phase.

CONCLUSION

This study demonstrates that the performance of nursing mothers and newborns during feeding presents higher LATCH scores on day 28 compared to the beginning of the neonatal period. Only the variable comfort showed a reduction in the evaluation of the scores, which indicates a decrease in the level of comfort of the nursing mother in relation to the breast and nipple over time. Furthermore, the presence of pain in the nipples/hurt nipples, the main complaint of nursing mothers on the 28th day postpartum, was significantly associated with not performing exclusive breastfeeding at the end of the neonatal period.

As contributions to the practice, the data point to the need for early intervention, preferably starting in the prenatal period and indispensable in the first puerperal week, when the performance of the nursing mother and the newborn during breastfeeding is more deficient and, therefore, there is a greater risk of weaning. They also indicate the need for adequate support to the mother-newborn binomial, especially regarding the breastfeeding technique, due to the presence of pain in the nipples/hurt nipples that implies in the reduction of the comfort level of the nursing mother and is related to the inadequate attachment and position of the child to the breast and to free demand.

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