



Pairs seen by lactation consultants and cessation of exclusive breastfeeding in the first month*

Binômios atendidos por consultores em amamentação e a interrupção do aleitamento materno exclusivo no primeiro mês

Binomios atendidos por consultores en lactancia y la interrupción de la lactancia materna exclusiva el primer mes

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ABSTRACT

Objective: To analyze the survival of exclusive breastfeeding and the factors associated with its cessation in the first month among pairs seen by a lactation consulting team. **Method:** This is a prospective cohort conducted with mother-infant pairs treated at the Hospital de Clínicas of Porto Alegre. **Results:** The sample consisted of 150 pairs. The survival curve indicates that 52.9% of the children remained on exclusive breastfeeding. The hierarchical model was constructed in four levels, and the factors associated with the cessation of exclusive breastfeeding were the milk supplementation during hospitalization, breast problems after hospital discharge and use of pacifiers. **Conclusion:** Awareness of these factors favors the early detection of pairs that may be predisposed to cessation of exclusive breastfeeding, who require greater support, dedication and care.

DESCRIPTORS

Breast Feeding; Maternal-Child Nursing; Consultants; Risk Factors.

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INTRODUCTION

Breast milk is the most appropriate food for the newborn, given its proven benefits compared to other types of milk⁽¹⁾.

It is estimated that breastfeeding could prevent 823,000 annual child deaths and 20,000 annual deaths from breast cancer⁽²⁾. This benefit is more evident when breastfeeding occurs in the first day of life, a practice that can prevent 16% of neonatal deaths, or 22% if the baby is breastfed in the first hour of life, which has been recommended by the World Health Organization (WHO) for more than 25 years⁽²⁻³⁾.

A consensus between the WHO, the United Nations Children's Fund (UNICEF) and the Brazilian Ministry of Health (MH) is the recommendation of exclusive breastfeeding (EBF) for six months, since breast milk reduces infant mortality rates, supports the biological growth and supplies all the nutritional needs of the child, stimulating child growth and development, and strengthening the mother-baby bond⁽⁴⁻⁶⁾.

However, data from the last national survey conducted in 2008 in the Brazilian capitals and in the Federal District, revealed that the mean duration of exclusive breastfeeding (EBF) in the country was 54.1 days, despite the WHO's recommendation of keeping the practice for up to 180 days. The same research found that the probability of a 1-month old child being exclusively breastfed was 60.6%⁽⁷⁾.

In order to improve these numbers, health services can offer the work of a Lactation Consultant (LC), a professional category created in the 1980s in the United States. The LC does not replace other professionals; they work together with the maternal and child care team, collaborating in the best possible way to overcome difficulties and promote successful lactation. A lactation consultant must be certified by the International Board of Lactation Consultant Examiners (IBLCE)⁽⁸⁾. Studies conducted in New Jersey⁽⁹⁾ and Hong Kong⁽¹⁰⁾ have already shown the contribution of this professional in the maintenance of EBF for longer durations.

Other studies have already identified factors associated with the cessation of EBF during the first month of life⁽¹¹⁻¹²⁾. However, there are no studies with this objective conducted with mother-infant pairs seen by a LC, which is a gap on national databases.

This study assumes that the support of a lactation consultant during post-partum hospital stay improves breastfeeding rates in the first month of life.

Considering the importance of the lactation consultants in the promotion, protection and support of breastfeeding and their direct influence on EBF rates, along with the scarcity of national studies on the work of this professional in the Unified Health System (*Sistema Único de Saúde* – SUS), the present study aims to verify the survival of EBF and the factors associated with its cessation in the first month of pairs seen by the lactation consultant team.

METHOD

DESIGN AND STUDY POPULATION

This is a prospective cohort study conducted with mother-infant pairs seen by lactation consultants at the Hospital de Clínicas of Porto Alegre/RS, some of them certified by the *International Board of Lactation Consultant Examiners*. It is part of the project called: "Breastfeeding patterns of children assisted by lactation consulting team".

The data used came from the follow-up of the participants during the first month of life of the child, or while EBF lasted during this period. The participants included were pairs living in Porto Alegre or metropolitan area, who provided their telephone number, gave birth to full-term children (Capurro method ≥ 37 weeks) with birth weight $\geq 2,500$ g, staying in a joint accommodation, started breastfeeding and seen by any of the professionals of the LC team. Mothers with twin babies, pairs with permanent or temporary contraindications to breastfeeding or mothers who had to be separated after starting breastfeeding were excluded.

DATA COLLECTION

The sample was selected from Monday to Friday through the identification of pairs that could be seen by the consulting team. After applying the inclusion criteria, these pairs were invited to participate in the study. The period of participants inclusion was from August 2016 to January 2017, with telephone follow-up until March 2017.

The collection of data for this research occurred in three moments: in person, in the Obstetric Inpatient Unit, interviewing the mothers after the first 24 hours of the child's birth and after receiving the care of a LC; and by telephone, at 15 and 30 days of the baby's life, with a 2-day limit after these ages for the application of the questionnaires. The group that carried out the collection in all the periods was composed of two master's students and two nursing undergraduates, and the phone calls were made in the central office of the Clinical Research Center of the institution.

The outcome studied was the cessation of EBF in the first month, and the independent variables included the reason for referral to the LC (first pregnancy, difficulty in the breastfeeding technique, infants large for gestational age – LGA – and history of no breastfeeding were the reasons encountered by the members of the multi-professional team who were responsible for referring the pairs to the consultation), social, economic and demographic characteristics of the mothers, and characteristics of the prenatal care, the delivery and the newborn.

DATA ANALYSIS

The sample calculation considered a 60% mean percentage of EBF at the end of the first month of life⁽⁷⁾, and a minimum hazard ratio of 1.48, according to data

obtained in an article referring to a set of variables, such as maternal age, cohabitation with maternal grandparent, number of prenatal consultations and type of delivery⁽¹³⁾, a statistical power of 80%, a significance level of 5% and a 20% estimate of losses during follow-up. Thus, the minimum sample size calculated was 150 mother-infant pairs. Calculations were performed using WinPEPI software, version 11.43.

Data were analyzed through descriptive and analytical analysis. The survival analysis evaluated the cessation of EBF in the first month of life of the child, which was considered uncensored data. The data of the mother-infant pairs still in EBF at the end of the first month were censored, as well as the losses to follow-up.

The association between variables and duration of EBF was evaluated by univariate and multivariate analysis, using the hierarchical Cox Regression model. The criterion used for the insertion of the variable in the multivariate model was p value <0.20 in the univariate analysis, and the criterion for permanence in the subsequent block was p value <0.10 in its respective block. The significance level adopted was 5% ($p < 0.05$), and the analyzes were performed in the SPSS software, version 21.0.

ETHICAL ASPECTS

The project was approved by the Research Ethics Committee of the Hospital de Clínicas of Porto Alegre, protocol no. 1,569,774 / 2016. Participants who agreed to participate signed two copies of the Informed Consent Form. The development of the research followed the Guidelines and Norms Regulating Research involving Human beings, as established in Resolution of the National Health Council No. 466/2012.

RESULTS

Of the 150 mother-infant pairs that composed the sample, there was a loss of 29 due to the impossibility of telephone contact, 10 on the 15th day and 19 on the 30th. Table 1 presents the characteristics of the study participants.

The survival analysis of EBF during the first month of life is presented in Figure 1. At 15 days, 67.4% of the infants were exclusively receiving breast milk and at the end of the first month, 52.9%.

During hospitalization, 46.4% of the children received milk supplementation, and the main reason was difficulty in the breastfeeding technique. This difficulty persisted during the first month of some pairs. The main problems with breastfeeding cited by mothers were directly related to the technique of breastfeeding: very full breasts (65.0%), breast pain (53.6%) and breast fissures (46.4%).

Almost half of the children (44.1%) used pacifiers in the first month, and the main reason for their introduction was to calm them down.

Table 2 presents the univariate analysis to demonstrate the variables related to the cessation of EBF during the first month.

Table 1 – Characteristics of the mother-infant pairs in joint accommodation seen by the LC team – Porto Alegre, RS, Brazil, 2016/2017.

Variables	n = 150	
Characterization of the mothers		
Age \geq 20 years	122	(81.3%)
Years of education \geq 8 years	121	(80.7%)
Self-reported white	93	(62.0%)
Works outside the home	65	(43.3%)
Has a partner	130	(86.7%)
Lives with partner	119	(79.3%)
Lives with maternal grandmother	36	(24.0%)
Lives with paternal grandmother	16	(12.3%)
Family income (minimum wages) [#]	2.2	(1.3-3.4)*
Duration of BF in previous child (months) [†]	3	(0-11)*
Current pregnancy		
Had prenatal follow-up	148	(98.7%)
Number of prenatal consultations \geq 8 [‡]	110	(73.3%)
Received orientation about BF on prenatal [‡]	44	(29.7%)
Participated in prenatal classes	28	(18.7%)
Smoked during pregnancy	21	(14.0%)
Used drugs during pregnancy	3	(2.0%)
Current delivery		
Vaginal birth	88	(58.7%)
Female infant	72	(48.0%)
Birth weight	3282g	\pm 452g [‡]

*Expressed in median and interquartile range; [‡]Expressed in mean and standard deviation; [#] Excluding those who did not know (n=22); [‡] Excluding those who did not perform prenatal care (n=2); Excluding first pregnancies (n=107).

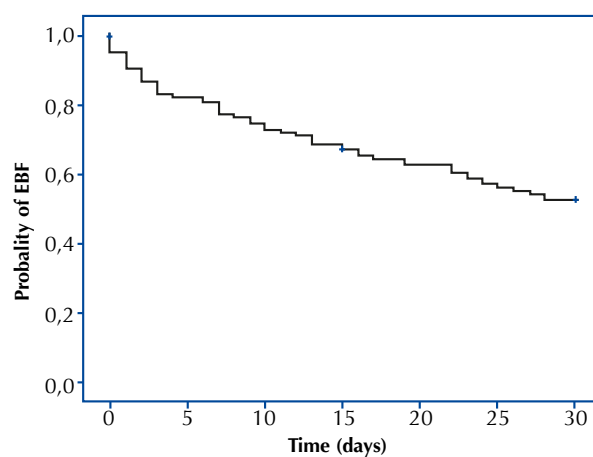


Figure 1 – Survival curve of exclusive breastfeeding – Porto Alegre, RS, Brazil, 2016/2017.

Table 2 – Univariate analysis for the cessation of EBF in the first month – Porto Alegre, RS, Brazil, 2016/2017.

Variables	HR	95% CI	P
Mother's age	1.03	0.99-1.07	0.057*
Mother's self-reported skin color	0.85	0.51-1.40	0.526
Presence of a partner	1.40	0.60-3.25	0.432
Cohabitation with partner	0.78	0.31-1.96	0.605
Cohabitation with maternal grandmother	1.15	0.65-2.00	0.622
Cohabitation with paternal grandmother	0.89	0.40-1.96	0.775
Family income	0.91	0.77-1.09	0.332
Mother's level of education	1.06	0.97-1.17	0.183*
Works outside the home	1.27	0.77-2.08	0.345
Prenatal consultations ≥ 8	0.95	0.50-1.81	0.895
Orientation about BF in prenatal	1.03	0.60-1.79	0.892
Prenatal classes	1.47	0.81-2.67	0.198*
Type of delivery	0.58	0.35-0.96	0.035*
Episiotomy	1.33	0.59-2.96	0.484
Gender of the infant	1.10	0.67-1.81	0.695
Referral: first pregnancy	0.83	0.50-1.37	0.472
Referral: difficulty in the technique	1.04	0.53-2.06	0.891
Referral: LGA	3.85	1.20-12.35	0.023*
Referral: history of no breastfeeding	2.56	1.02-6.41	0.044*
Milk supplementation during hospitalization	2.67	1.59-4.46	0.000*
Use of pacifiers	1.96	1.19-3.22	0.008*
Breast problems after discharge	0.35	0.18-0.70	0.003*

* p ≤0.20 was considered statistically significant.

The variables that reached significance level ≤0.20 in the univariate analysis were included in the hierarchical model and distributed in four levels, according to Figure 2.

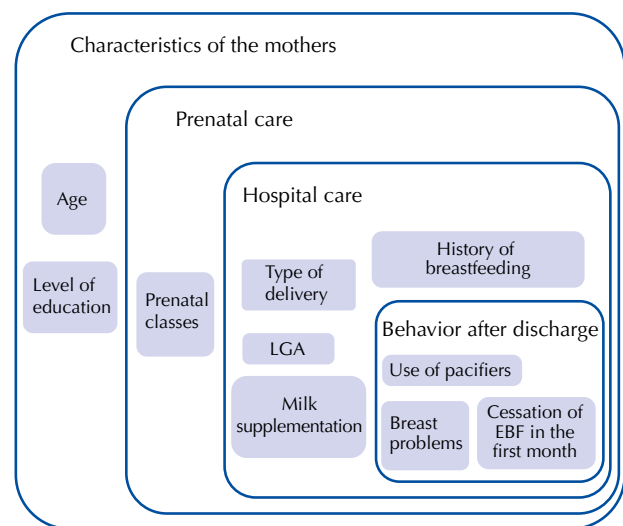


Figure 2 – Hierarchical model to investigate factors associated with the cessation of EBF in the first month of life – Porto Alegre, RS, Brazil, 2016/2017.

The multivariate analysis, expressed in Table 3, was used to control the confounding factors between the study variables and the cessation of EBF in the first month.

Table 3 – Factors studied and cessation of EBF in the first month – Porto Alegre, RS, Brazil, 2016/2017.

Variables	Cessation of EBF		
	HR	95%CI	P
Characteristics of the mothers			
Age	1.03	0.99-1.08	0.160
Level of education	1.02	0.91-1.14	0.699
Prenatal care			
Prenatal classes	1.43	0.78-2.60	0.244
Hospital care			
Type of vaginal delivery*	0.63	0.38-1.05	0.078
Referral: LGA	2.52	0.69-9.10	0.158
Referral: history of no breastfeeding	1.82	0.67-4.92	0.238
Received milk supplementation during hospitalization*	2.34	1.38-3.96	0.002
Behavior after discharge			
Use of pacifiers	1.86	1.13-3.08	0.015
Breast problems after discharge	2.38	1.18-4.76	0.015

* Included in the next stage due to p ≤0.10.

The following factors associated with cessation of EBF in the first month were identified: receiving supplementation during hospitalization (HR: 2.34; 95% CI 1.38 – 3.96; p=0.002), use of pacifiers (HR: 1.86; 95% CI 1.13 – 3.08; p=0.015) and breast problems after discharge (HR: 2.38; 95% CI 1.18 – 4.76; p=0.015). On the other hand, vaginal delivery was a protective factor (HR 0.63) for the cessation of EBF in the first month.

DISCUSSION

The present study assessed the survival of low EBF, as did another study conducted in the same scenario in 2003, which identified a 54% probability of EBF at the end of the first month⁽¹³⁾. These results suggest stagnation, since in the II BF Prevalence Survey in the Brazilian capitals and the Federal District, the probability of EBF among 1-month old infants in the city of Porto Alegre was 60.7%⁽⁷⁾.

National studies highlight the regional differences in the country. A cohort study with 1,344 mother-infant pairs selected in maternity hospitals in Bahia identified, at the end of the first month, 89.6% of EBF⁽¹⁴⁾. Another cohort with 261 mother-infant pairs in São Paulo found a 95% probability of EBF at 30 days after birth⁽¹⁵⁾.

Three variables remained associated with the cessation of EBF in the first month: receiving milk supplementation during hospitalization, breast problems after discharge and use of pacifiers.

The percentage of milk supplementation in the hospital demonstrates the growth of this practice, since another study conducted in the same location in 2015 identified that 23.5% of the children received supplementation⁽¹⁶⁾. The reason most cited by the mothers of this study for the use of

milk formula was difficulty in the breastfeeding technique. According to WHO and UNICEF, milk supplementation is acceptable in specific situations, such as infants born weighing less than 1,500 g, infants born at less than 32 weeks of gestation, infants at risk of hypoglycemia, nursing mothers using medication incompatible with breastfeeding, among other situations⁽¹⁷⁾.

Difficulty in the breastfeeding technique is not among the reasons that justify milk supplementation. However, it also appeared as a reason in a study developed in an institution accredited as a Baby-Friendly Hospital (BFH), where 22.1% of supplementations resulted from sucking and latching difficulties⁽¹⁸⁾. This can be harmful, since supplementation may make sucking even more difficult due to the reduced frequency of breastfeeding and nipple stimulation⁽¹⁸⁾.

Considering the objectives of hospitalization in a joint accommodation presented in Administrative Rule no. 2068, from October 21st, 2016, the permanence of the infant with the mother should allow an effective breastfeeding, despite the individual characteristics of each pair, and milk supplementation would be recommended in situations that contraindicate breastfeeding⁽¹⁹⁾.

Several studies indicate that the use of milk supplementation in the first hours of life increases the probability of inclusion of other milks after hospital discharge, resulting in decreased breast milk production, shorter BF time, and early weaning^(11,18). A study carried out in Canada found that formula supplementation in the first 72 hours of life was associated with 3-fold greater risk of breastfeeding cessation by day 60⁽¹²⁾. Thus, the need for supplementation should be carefully evaluated through a cost-benefit analysis, since it can lead to BF cessation and early weaning, not allowing the child to enjoy the advantages of receiving the mother's milk.

Women who had breast problems after discharge were more likely to stop EBF in the first month. The most cited problems were also identified in another study as unfavorable factors for EBF⁽²⁰⁾.

The complaint about very full breasts is the result of inadequate emptying of the breasts due to the infant's inefficient removal of milk or due to low frequency of breastfeeding⁽²¹⁾. The complaint of breast pain during breastfeeding is common, given the strong suction of the nipple and areola. The pain may also be due to a nipple trauma related to incorrect breastfeeding technique⁽²¹⁾. Studies indicate breast pain as a factor that makes breastfeeding difficult, as did a study conducted with women in the immediate puerperium in Minas Gerais⁽²²⁾ and another one developed in a medium-sized hospital in Rio Grande do Sul⁽²³⁾.

A study conducted in a large hospital in the South region of Brazil identified nipple fissure as the most cited difficulty to breastfeed (64.1%)⁽¹⁶⁾. A cohort study conducted at a hospital in São Paulo showed that, at 15 days, 39.2% of the mothers reported that their greatest difficulty was nipple trauma, one of the problems most highlighted in the literature as a difficulty of breastfeeding⁽²⁴⁾. The same study identified that mothers who presented these difficulties kept EBF for a shorter time, corroborating our results.

The use of pacifiers was indicated as a predictor of cessation of EBF at the end of the first month, when almost half of the infants used it. Despite the high index, there was a 18.9% reduction compared to the research carried out at the same institution in 2003⁽¹³⁾. This difference is perhaps related to the fact that the sample of the 2003 study consisted of pairs that were seen or not by the LC team, whereas all participants in the current research were seen by these professionals, who provide orientations to maintain EBF for longer and recommend not using the pacifier.

A study carried out in maternity hospitals in Bahia found that children who used pacifiers had a 1.40-fold higher risk of early cessation of EBF⁽¹⁴⁾. The international scenario is not different from the Brazilian when it comes to the negative influence of pacifiers. A study conducted in Rome identified that children who used pacifiers within the first 2 weeks of life had a 2.39-fold higher risk of stopping EBF than those who did not use it⁽²⁵⁾. A systematic review of epidemiological studies identified the use of pacifiers was the factor most strongly associated with cessation of EBF⁽²⁶⁾. These results demonstrate the relevance of the role of professionals in discouraging the use of the pacifier, aiming at keeping exclusive breastfeeding for the recommended time.

The early introduction of the pacifier may lead to difficulties in BF and maternal anxiety and insecurity⁽²⁷⁾. This fact may explain the high percentage of mothers who offered pacifiers to their children to calm them down. Considering that the establishment of EBF occurs during the first month of life, the use of pacifiers should be strongly discouraged, given its relation to the cessation of EBF.

Women who had a vaginal delivery were 37% less likely to stop EBF. Studies conducted in Ceará⁽²⁸⁾ and Nigeria⁽²⁹⁾ had already demonstrated the positive association between vaginal delivery and BF and EBF.

Furthermore, vaginal delivery has been associated with successful breastfeeding in the first hour after birth. This is because children born by vaginal delivery are already active during the first hour of life, which strengthens bonding and breastfeeding⁽³⁰⁾.

There may have been some recall bias regarding the introduction of other fluids and pacifiers, as well as information bias, since the use of formula during hospitalization was informed by the mothers in the first telephone contact after discharge, in the fifteenth day of the child's life, that is, the information was not collected directly from the medical record. The fact that the variable skin color was presented in the collection form as "white" and "nonwhite" is also a limitation of the study, since women with non-white skin color were not adequately characterized.

CONCLUSION

Referral to lactation consultations is associated with difficulties of the mother-infant pair, who is more vulnerable to early cessation of EBF. However, our EBF rate at the end of the first month is similar to other studies that did not assess exclusively pairs who presented difficulties to breastfeed. This demonstrates the effectiveness of the work of the LC team in managing and overcoming the difficulties presented.

Factors associated with cessation of EBF in the first month were: milk supplementation during hospitalization, breast problems after discharge and use of pacifiers. Vaginal delivery was considered a protective factor for the cessation of EBF. Professionals, specially the nurse, who is present in the conception planning, gestation, delivery and puerperium, must be aware of these factors to favor an early detection of pairs predisposed to cessation of

EBF, who require greater support, dedication and care. In addition to knowledge of these factors, professionals must pass this knowledge to pregnant and puerperal women, their partners and their family in order to maintain EBF for the recommended time.

Studies comparing the patterns of BF between a group seen by a LC and one that is not should be conducted in order to identify the common factors to both groups.

RESUMO

Objetivo: Verificar a sobrevida do aleitamento materno exclusivo e os fatores associados à sua interrupção no primeiro mês de binômios atendidos pela equipe de consultoria em aleitamento materno. **Método:** Trata-se de uma coorte prospectiva realizada com binômios mãe-bebê atendidos no Hospital de Clínicas de Porto Alegre. **Resultados:** A amostra foi constituída de 150 binômios. A curva de sobrevida indica que 52,9% das crianças permaneciam em aleitamento materno exclusivo. O modelo hierarquizado foi construído em quatro níveis, e os fatores associados à interrupção do aleitamento materno exclusivo foram recebimento de complemento lácteo durante a internação, problemas com as mamas após a alta hospitalar e utilização de chupeta. **Conclusão:** O reconhecimento desses fatores favorece a detecção precoce de binômios que podem estar mais predispostos ao abandono da amamentação exclusiva, exigindo maior apoio, dedicação e cuidado.

DESCRITORES

Aleitamento Materno; Enfermagem Materno-Infantil; Consultores; Fatores de Risco.

RESUMEN

Objetivo: Verificar la supervivencia de la lactancia exclusiva y los factores asociados a su interrupción en el primer mes de binomios atendidos por el equipo de consultoría en lactancia materna. **Método:** Se trata de una cohorte prospectiva realizada con binomios madre-bebé atendidos en el Hospital de Clínicas de Porto Alegre. **Resultados:** La muestra estuvo constituída de 150 binomios. La curva de supervivencia señala que el 52,9% de los niños permanecían en lactancia materna exclusiva. El modelo jerarquizado fue construido en cuatro niveles, y los factores asociados con la interrupción de la lactancia materna exclusiva fueron el recibo de complemento lácteo durante la estancia hospitalaria, problemas con las mamas después del alta y utilización de chupete. **Conclusión:** El reconocimiento de esos factores favorece la detección precoz de binomios que pueden estar más predisuestos al abandono de la lactancia exclusiva, exigiendo mayor apoyo, dedicación y cuidado.

DESCRIPTORES

Lactância Materna; Enfermería Maternoinfantil; Consultores; Factores de Riesgo.

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