Variables that influence the maintenance of exclusive breastfeeding

VARIÁVEIS QUE INFLUENCIAM A MANUTENÇÃO DO ALEITAMENTO MATERNO EXCLUSIVO

VARIABLES QUE INFLUENCIAN LA MANUTENCIÓN DEL AMAMANTAMIENTO MATERNO EXCLUSIVO

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ABSTRACT

This is a descriptive, exploratory and retrospective study, with a quantitative approach, performed in a low-income community in São Paulo, with the purpose to identify whether the maintenance of exclusive breastfeeding (EBF) in the first six months is influenced by the following variables: early contact in the first hour after birth, permanence in joint lodging, type of delivery and type of hospital. Data were collected from 75 medical records and analyzed with the methodology of generalized estimate equations. The results showed that the variables joint lodging, type of hospital and type of delivery interfered in the maintenance of EBF; however, that was not the case with early contact. It was concluded that the EBF indexes were higher in cases where the mother and the baby remained together after the birth, in baby-friendly hospitals and after normal deliveries. It was also observed that the care received by the mother during the process of delivery and birth influences breastfeeding directly.

KEY WORDS

Breast feeding.
Health promotion.
Maternal and child health.

RESUMO

Pesquisa descritiva, exploratória e retrospectiva, com abordagem quantitativa, realizada em uma comunidade carente de São Paulo com o objetivo de verificar se a manutenção do aleitamento exclusivo (AE) nos primeiros seis meses é influenciada pelas variáveis: contato precoce na primeira hora após o nascimento, permanência em alojamento conjunto, tipo de parto e tipo de hospital. Os dados foram coletados de 75 prontuários e analisados com a metodologia de equações de estimação generalizada. Os resultados mostraram que as variáveis alojamento conjunto, tipo de hospital e tipo de parto interferiram na manutenção do AE, o mesmo não ocorrendo com o contato precoce. Concluiu-se que os índices de AE foram maiores nos casos em que mãe e bebê permaneceram constantemente juntos após o parto, em hospitais amigos da criança e após partos normais. Constatou-se que a assistência recebida pela mulher durante o processo de parto e nascimento influencia de forma direta a amamentação.

DESCRITORES

Aleitamento materno.
Promoção da saúde.
Saúde materno-infantil.

RESUMEN

Se trata de una investigación descriptiva, exploratoria y retrospectiva, con abordaje cuantitativo, realizada en una comunidad carente de San Pablo, con el objetivo de verificar si la manutención del amamantar exclusivo (AE) en los primeros seis meses fue influenciada por las variables: contacto precoz en la primera hora después del nacimiento, permanencia en el mismo alojamiento, tipo de parto y tipo de hospital. Los datos fueron recolectados de 75 registros y analizados con la metodología de ecuaciones de cálculo generalizado. Los resultados mostraron que las variables alojamiento conjunto, tipo de hospital y tipo de parto interfirieron en la manutención del AE, lo mismo no ocurrió con el contacto precoz. Se concluye que los índices de AE fueron mayores en los casos en que la madre y el bebé permanecieron constantemente juntos después del parto, en hospitales amigos del niño y después de partos normales. Se constató que la asistencia recibida por la mujer durante el proceso de parto y nacimiento influye de forma directa en el amamantar.

DESCRIPTORES

Lactancia materna.
Promoción de la salud.
Salud materno-infantil.

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INTRODUCTION

The importance of breastfeeding for the development of the child in physical and emotional terms is undeniable, so much so that national and international organizations strive to establish and promote strategies that encourage and provide for breastfeeding.

Studies regarding the topic have strived to provide evidence for the most recommended practices for the maintenance of breastfeeding, especially the exclusive type, and its contribution in reducing morbimortality in children. In this perspective, scientific-based interventions are seen to have a positive effect towards increasing breastfeeding rates, and to resuming breastfeeding if it has been abandoned. Methods that are usually recommended are individual counseling, help from community agents, home visits, family support and educational programs in the prenatal and puerperium periods[1-2].

In addition, the worldwide Baby-Friendly Hospital Initiative (BFHI) strategy represents a huge advance in encouraging exclusive breastfeeding[3-4]. In Brazil, some professionals tied to old and obsolete practices are observed to hinder the BFHI expansion.

In addition, practices related to the healthcare model adopted for delivery and childbirth can encourage breastfeeding, as they favor and provide more autonomy to the woman. Part of the problems verified in breastfeeding would not exist if actions and attitudes considered more humanized were adopted, noting the active and guided participation of accompanying partners during the pre-natal period and delivery, and the restriction of abusive, unnecessary interventions such as selective cesarean sections[1].

Studies regarding the topic have strived to provide evidence for the most recommended practices for the maintenance of breastfeeding, especially the exclusive type, and its contribution in reducing morbimortality in children.

In the context of activities provided to women's healthcare in a low-income community, and developed by the authors, they observed that not all the participants were assisted during childbirth in institutions following humanized practices or the BFHI recommendations. In the period following delivery, several women were observed not to have been encouraged to have skin-to-skin contact with their babies, or even rooming-in, in spite of the good conditions in which their children were born.

Considering this situation, the authors decided to perform a study with the purpose of verifying whether the maintenance of exclusive breastfeeding in the first six months of the baby's life is influenced by the following variables: early skin-to-skin contact and exclusive breastfeeding in the first hour after delivery, mother and child rooming-in together, type of delivery and type of hospital where the birth occurred.

METHOD

Research type and place

This is a descriptive, exploratory and retrospective research study, with a quantitative approach, performed at Núcleo São Lucas de Atendimento à Saúde da Mulher e da Criança – an extension and research project developed in a low-income community in the city of São Paulo since 1999. Within the research project, there are two programs executed by the researchers, usually aided by nursing students or undergraduate/graduate holders of scholarships: The first is Healthcare Promotion for Pregnant Women, which provides educational group activities. The second program is Encouragement to Exclusive Breastfeeding, in which the women return to the institution with their babies after delivery and are monitored for six months, in individual or collective appointments.

These activities are performed weekly in a daycare institution in the Paraisópolis shantytown, an 80-thousand person community in the southern region of the city of São Paulo, which has only two basic healthcare units. The precarious conditions of the community tend to bring in social organizations, such as Núcleo, to develop projects focused on complementing or improving basic healthcare.

Sample

To begin with, the 120 medical records of all women participating in the educational groups were analyzed, and later, the women were monitored after childbirth, from February, 2003 to December, 2006. The researchers selected the records of mothers who attended appointments regularly since their first appointment after childbirth – usually during the first two weeks after delivery – until the last appointment, when the baby was about six months old. This was the inclusion criterion, which yielded 75 medical records.

Data Collection

Data collection was performed for all 75 records, which contained information obtained from interviews and verification of pre-natal, delivery and post-delivery documents. Data regarding the maintenance of exclusive breastfeeding in the babies' first six months of life and the following variables were collected: early skin-to-skin contact and exclusive breastfeeding in the first hour after delivery, mother and child rooming-in together, type of delivery and type of hospital where the birth occurred. Information about the socio-demographic and obstetric characteristics of the women was compiled, as well as interactions between mother and infant after birth.

Data analysis

Six periods of analysis were determined to correlate the variables over the time of exclusive breastfeeding maintenance in the first six months of the baby's life: 0-30 days, 31-60 days, 61-90 days, 91-120 days, 121-150 days and 151-180 days. Since the appointments would not always occur at the end of the preset periods, *lower* approximations were used in cases of intervals of 15 days or less, and *higher* approximations for intervals of 15 days or longer.

In addition, the authors decided to consider uniquely *exclusive breastfeeding* (EB) and *non-exclusively breastfeeding* (NEB), due to the low incidence of non-breast feeding in all the first periods of the analysis. The classification of the breastfeeding type used at Núcleo follows the definition of the World Health Organization[3], where *exclusive* refers to breastfeeding where the child receives only breast milk, either directly from the mother or extracted, and no other solid or liquid food, except for vitamin drops or syrups, vitamin supplements or medication; *mixed* is the characteristic of receiving breast milk in addition to any other type of food, such as artificial milk, tea or juice; *artificial* is feeding without breast milk.

The *Generalized Estimation Equations* (GEE)[5] were used for the inferential analysis of the breastfeeding maintenance analysis in the six periods, considering the dependence between the six breastfeeding periods and the binomial distribution, EB or NEB.

One model was built for each variable by analyzing the existence of effects in the six periods, as well as the effects of the interaction between each variable and time. When the interaction was not considered statistically significant, the group effect was evaluated jointly for all periods, and the time effect for both response categories for the variable of interest: early contact (EC) or non-early contact (NEC); rooming-in (RI) or not rooming-in (NRI); normal delivery (ND) or surgical delivery (SD), including procedures such as cesarean sections and the use of forceps; BFHI-compliant hospital (BFH) or non-compliant (NBFH) at the date of childbirth. In situations where the interaction effect was significant, comparisons between the groups were performed separately for each period, just as the time effect was tested separately for each category. Results with p-values lower than 0.05 were considered statistically significant.

Ethical procedures

In accordance with the CONEP resolution #196/96, which regulates research on human beings, all the women who participate in the activities at Núcleo are required to sign a term of consent, which includes the objectives of the organization, its research activities, the guarantee of free, voluntary participation, the information that the information in their medical records may be used for research and publication, guarantees of secrecy in regards to their identity and that there will be no risk for them or their child if they decide to take part in the programs. Since only medical records were used in this research, the subjects were not exposed to risks or aggravations, and the study was approved by the Review Board of Universidade de Guarulhos (File #150/2006).

RESULTS

Data about the socio-demographic and obstetric characterization and the healthcare reported for the birth of their previous baby, as seen in Table 1, show a higher frequency of young women, aged 14 to 23 (53%), reportedly living in a consensual union with their partners (56%). They have only elementary school education (66%), either full or not; they are primarily from the North/Northeastern regions of Brazil (56%); they do not hold formal jobs (89%); they were having their first or second child (68%) through normal delivery (61%) in hospitals that did not comply with the BFHI (85%), without skin-to-skin contact or breastfeeding in the first hour after delivery (57%), and with the newborn's mother rooming-in during their hospital stay (84%).

Table 1 - Socio-demographic and obstetric characterization of the women - São Paulo - 2007

CHARACTERISTICS	Nº	%
Age		
14-18 years old	14	19
19-23 years old	26	34
24-28 years old	14	19
29-33 years old	15	20
34 years old or more	6	8
Marital status		
Consensual union	42	56
Single	17	23
Married	16	21
Education		
Illiterate	2	3
Elementary school, incomplete	42	55
Elementary school, full	8	11
High school, incomplete	8	11
High school, full	15	20
Region of origin		
North / Northeast	42	56
South / Southeast	29	39
Central-Western	4	5
Occupational status		
Unemployed / homemaker	67	89
Regularly employed	8	11
Number of children		
1 - 2	51	68
3 - 4	18	24
5 - 6	5	7
7 or more	1	1
Type of delivery (last)		
Normal	46	61
Cesarean section	24	32
Forceps	5	7
Place (last delivery)		
BFHI-registered hospital	9	12
Non-BFHI hospital	64	85
At home	2	3
Breastfeeding and skin-to-skin contact in the first hour after the last delivery		
Yes	32	43
No	43*	57
Rooming-in with the newborn after the last delivery		
Yes	63	84
No	12*	16

***** Eight cases of complications with the newborn prevented breastfeeding and/or skin-to-skin contact with the mother, and the consequent rooming-in.

As justification for the non-occurrence of breastfeeding and/or skin-to-skin contact and for the postpartum separation of the binomial and rooming-in, 8% of the cases were observed to be related to complications that forced the newborn to remain in the nursery for several days. In the remaining cases, no plausible explanation was found for the separation.

Regarding breastfeeding, 92% of the women were observed to have started it exclusively. At the end of the babies' sixth month of life, 31% of them remained in EB, and 62% were NEB.

The correlation of the early contact (EC or NEC) variable with the type of breastfeeding showed that:

• There is no significant effect in the interaction between EC and time ($p = 0.4697$), meaning that the effect of the variable, if it exists, does not depend on the time to be analyzed, and the time effect, if it exists, does not depend on EC.

• There is no significant effect of EC in the type of breastfeeding for all the six periods of monitoring ($p = 0.1746$), meaning that EC did not interfere in the maintenance of EB.

• There is a significant effect for the EC and NEC groups regarding time, with a difference between the times occurring in relation to the type of breastfeeding. The p-value of each relation was always lower than *0.05*, meaning that the longer the time is, the lowest the chance of EB in both groups.

This effect can be observed in Figure 1, which shows the EB percentage in the first six months according to the early skin-to-skin contact variable and breastfeeding in the first hour after delivery.

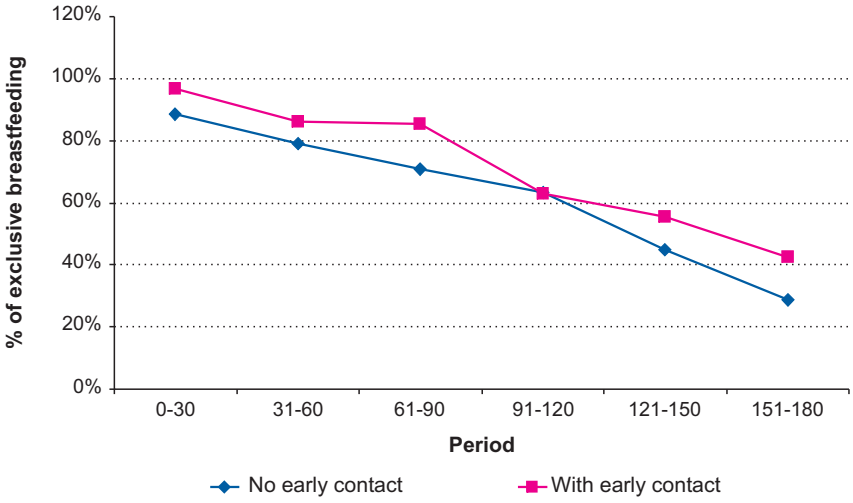

Figure 1 - EB percentage in the first six months according to the type of skin-to-skin contact - São Paulo - 2007

Regarding rooming-in (RI and NRI), its correlation with the type of breastfeeding showed that:

• There is no significant effect in the interaction between RI and time ($p = 0.1032$), meaning that the effect of the variable, if it exists, does not depend on time, and the time effect, if it exists, does not depend on RI.

• There is a significant RI effect ($p = 0.0297$) in the type of breastfeeding for all analyzed periods, meaning that RI interferes in the maintenance of EB.

• There is a significant effect for the RI and NRI groups in relation to time, with differences between the periods regarding type of breastfeeding, because the p-value of each relation was always lower than *0.05*. Women in RI were observed to be 35 times more likely to maintain EB when compared with those in NRI in all periods analyzed, meaning that the longer the time, the lower the chance of maintaining EB.

This effect can be observed in Figure 2, which shows the EB percentage in the first six months according to the rooming-in variable.

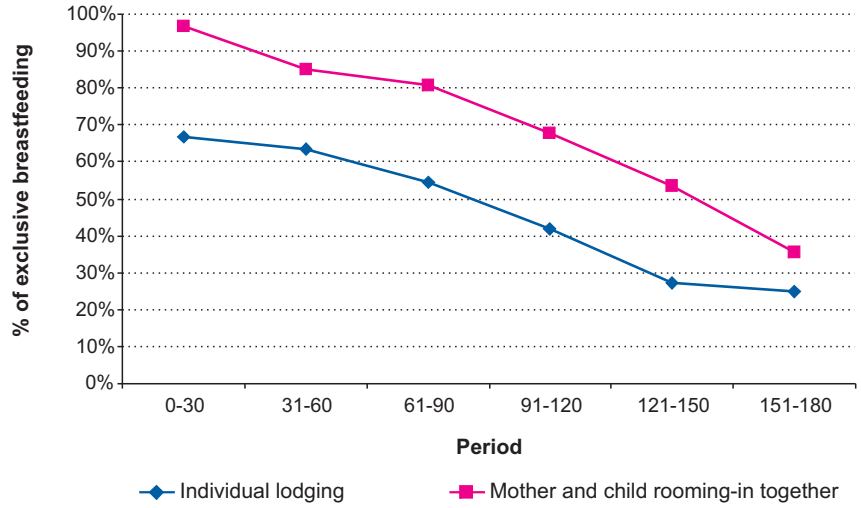

Figure 2 - EB percentage in the first six months according to the type of lodging - São Paulo - 2007

Regarding the type of hospital (BFH or NBFH), the correlation of this variable with the type of breastfeeding showed that:

- There is a significant effect in the interaction between BFH and time (*p=0.0001*), meaning that the effect of the variable, if it exists, depends on the time in which it is analyzed, and the time effect, if it exists, depends on BFH.

- There is no significant effect of BFH (*p=0.4308*) in the type of breastfeeding for all analyzed periods, meaning that BFH does not interfere in the maintenance of EB.

- There is no significant effect of BFH in relation to time, because all p-values are greater than *0.05*;

- There is a significant effect for the NBFH group in relation to time, with all p-values being lower than *0.05*. There is a difference between the periods in relation to the type of breastfeeding, meaning that the longer the time is, the lowest the chance of EB in the NBFH group.

This effect can be seen in Figure 3, which shows the percentage of EB in the first six months according to the type of hospital.

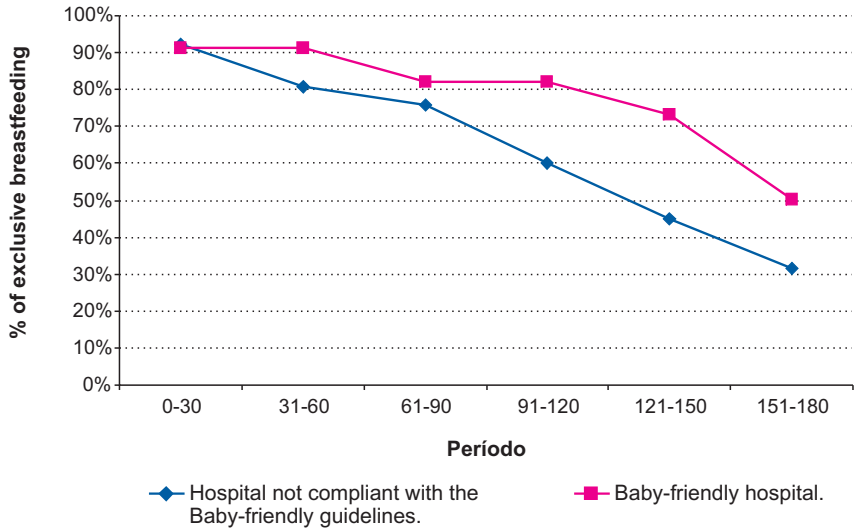

Figure 3 - EB percentage in the first six months according to the BFHI status of the hospital - São Paulo - 2007

Regarding the last variable, type of delivery (ND or SD), the correlation between it and the type of breastfeeding showed that:

- There is a significant interaction effect between the type of delivery and time (*p=0.0001*), i.e., the effect of the variable, if it exists, depends on the period being analyzed and the time effect, if it exists, depends on the type of delivery.

- When the types of delivery are compared with the type of breastfeeding, there was a significant difference (*p=0.0389*) only in the first period (0-30 days), in which women with ND had a higher chance of maintaining EB when compared with

those who underwent SD. No statistically significant differences were observed in the other periods ($p > 0.05$);

• For women with ND, there is a significant difference in the comparison of all periods ($p < 0.05$), except when the 3rd period is compared with the 2nd ($p=0.1552$) and when the 5th period is compared with the 4th ($p=0.0792$), observing that, the higher the period is, the lower the chance of EB.

• For women with SD, there was also a significant difference in the comparison of all times ($p < 0.05$), except in the comparison of the 2nd period with the 1st ($p=0.3092$) and the 4th period with the 3rd ($p=0.5645$), meaning that the higher the period is, the lower the chance of EB.

These differences can be seen in Figure 4, which shows the EB percentage in the first six months according to the type of delivery.

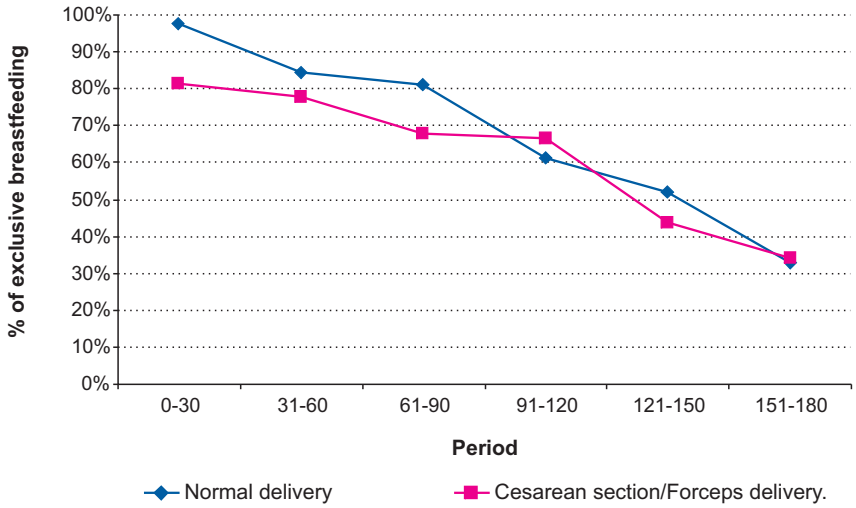

Figure 4 - EB percentage in the first six months according to the type of delivery – São Paulo – 2007

DISCUSSION

Among the characterization data, the low education and the high numbers of adolescent mothers are observed to interfere negatively with the installation and maintenance of breastfeeding[2,4,6-8]. These factors have a negative connotation for the health of the baby, since the main causes of morbimortality in the first year of life are intimately linked to the conditions of health and nutrition of the children, and also to the education and income of the mothers, as well as the quality of care in the gravidic-puerperal cycle[9].

In spite of these women having received information about breastfeeding during gestation, other factors may have interfered in their reduced self-confidence to breastfeed, such as the separation from their babies.

When one considers the separation of mother and child right after delivery, this is probably due to the existence of health problems in the mother or neonate. However, this was not the reality found in this study, because in most cases no problems explaining the lack of contact and breastfeeding in the first hour after delivery were reported or documented, even in BFHI-compliant hospitals, which is unexplainable and goes against the promotion of breastfeeding.

Even without significant differences from a statistical viewpoint that could prove the interference of EC in the maintenance of EB, this type of breastfeeding was evident in practically all the six periods monitored.

Evidence shows that EC extends breastfeeding, both immediately after delivery and two or three months later, in addition to promoting effects in the maternal behavior and aiding in the establishment of bonds between mother and child[1,4,10-11]. Even in cases in which breastfeeding is not recommended, skin-to-skin contact must be encouraged, since there is no reason to justify the high rates of separation right after delivery verified in this study.

Both EC and the permanence in RI, the fourth and seventh steps of BFHI, not only favor breastfeeding but also the establishment of a bond between mother and child, with a consequent reduction in cases of mothers abandoning babies[12].

Another unfortunate obstacle for breastfeeding, still present in the city of São Paulo, and present in both private and SUS-associated hospitals, is the separation of mother and baby after delivery. In this situation, where the newborns remain in nurseries until discharged from the hospital, one wonders how mothers can become confident in breastfeeding their infants if they are not even allowed to stay with their babies, learning to know them and care for them.

RI also provides opportunities of counseling or practical help during breastfeeding sessions, so that the mother will feel more confident in dealing with several types of pressure to not breastfeed or to offer complementary foodstuffs to her newborn[13].

The statistical analysis showed that the occurrence of RI favors higher rates of EB, meaning that this variable interferes in the maintenance of EB.

In addition to other positive aspects, RI is noted to encourage the mother to breastfeed freely, without restrictions regarding the frequency and duration of the breastfeeding sessions, which can also prevent the utilization of pacifiers and all the negative effects that they bring[1,4]. This process can be successful even when mother and baby are separated[4], especially when the woman believes in her ability to breastfeed, finds support and develops self-confidence after delivery, activities that are developed by all the professionals that work at Núcleo.

Even though the breastfeeding data are limited by the small sample in this study, the results are positive, i.e., 72% of the monitored mothers breastfeed their babies for at least 6 months. Weaning, when it was observed, reached levels higher than 10% after a period of three months only, usually around 108 days.

As noted before, these rates are not representative of the Brazilian reality, whose EB median is 23 days[11]. For this reason, it is believed that investing in the promotion of breastfeeding, without rules and in a welcoming way, is a relevant social task, mainly due to the circumstances in which the women live and raise their children in that low-income community[2].

Several studies relate breastfeeding, even the mixed type, with the reduction of diarrhea and respiratory diseases, the main causes of hospital admissions among infants up to one year old in the state of São Paulo. These studies note that programs that promote breastfeeding, such as BFHI, result in longer breastfeeding periods, sometimes twice as long as the national average[7,13-14].

Therefore, BFHI reflects positively in the breastfeeding rates, which is evident in this study, since a significant effect between BFH and EB was proven in this study in nearly all monitored periods. Failure to transform maternities into baby-friendly institutions is unjustifiable, as is the implementation of only a handful of the BFHI steps. Evidence shows that the ten steps must be performed as a whole, which demands continuous support of the mothers, as well as qualification and training for all professionals at the institution, even those who are not directly involved with care[4].

Statistical analysis also showed a significant effect in the interaction between ND and EB, especially during the baby's first month of life. Surgical deliveries result in more complications for the mother's and the perinatal health, usually related to the difficulties at the beginning of breastfeeding, especially in hospitals that are not BFHI-compliant[15].

Mothers undergoing surgical deliveries have also more difficulties in breastfeeding, due to postoperative pain or inadequate affective involvement. In effect, the cesarean section either delays or makes the first breastfeeding sessions difficult because they alter the mother's and the newborn's endocrine responses after delivery, due to the fact that the that the surgical procedure causes pain and drowsiness, and the use of analgesics and anesthetics affects the interaction between mother and child[15].

All these factors contribute to the reduction of breastfeeding and a consequent offer of complementary liquids to the newborns, which results in lower breastfeeding rates, especially in the first month of life[12, 15-17], which was also found in this research.

CONCLUSIONS

It is concluded that the type of hospital, rooming-in and the type of delivery influenced the maintenance of EB during the six first months of life for the babies included in this research.

Regarding early contact, the fourth BFHI step, which favors not only breastfeeding but also the bond between mother and child, it was not observed to influence the maintenance of exclusive breastfeeding.

The EB rates were shown to be higher in cases in which mother and child were constantly together after delivery, both when births occurred in baby-friendly hospitals and after normal deliveries. As such, it was observed that the care received by the woman during childbirth, as well as other aspects, have an influence on breastfeeding.

Such results show that there is still much to be done to improve maternal-child healthcare in our country, both regarding women's healthcare and the implementation and maintenance of BFHI strategies, in addition to other policies that encourage breastfeeding.

Since breastfeeding is a cultural, social and political act of multiple and wide dimensions, several healthcare professionals are unprepared to deal with it. It is also noted that the current obstetric and neonatal healthcare models do not provide support to the woman in the process of breastfeeding at the moment of delivery or even afterwards.

It is important to note that extending the length of the breastfeeding period does not depend on isolated strategies, but on the combination of different interventions executed throughout the gravidic-puerperal cycle. The data in this study show the effectiveness of the programs offered at Núcleo to promote breastfeeding, especially with regular support for the nursing mothers, in addition to strategies that increase their knowledge during gestation.

All these practices must become routine for the professionals who promote breastfeeding, especially for low-income families, for whom the advantages are evident. The rates found here encourage the maintenance and improvement of the programs offered at Núcleo, since they help to overcome the adverse effects that are the consequences of inadequate maternal-child healthcare. Investing in this theme is a relevant social task, especially considering the adverse context of the community where the women in this study and their families live.

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