Assessment of factors that interfere on breastfeeding within the first hour of life

Avaliação de fatores que interferem na amamentação na primeira hora de vida

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Financial support: FAPERJ Scientific Initiation grant.
Work linked to Fernandes Figueira Institute, Oswaldo Cruz Foundation
All authors have read and approved the final version of the article, and have CVs on CNPq
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Abstract

Objective: To investigate how the 4th Step of the Baby-Friendly Hospital Initiative was applied, assess the prevalence of breastfeeding (BF) within the first hour after birth and analyze factors associated with non-BF in this period of life. **Methods:** Cross-sectional study conducted in a high-risk maternity-hospital in Rio de Janeiro City, Brazil, with interview to a sample of 403 rooming-in mothers. The prevalence ratio with its respective 95% confidence interval was estimated by the use of SPSS 15® from a model with complementary log log link function. **Results:** The prevalence of BF in the first hour of life was 43.9%. Multivariate analysis showed that were protected against non-BF in the first hour after birth non-black women (PR = 0.62, 95% CI: 0.42-0.90), multiparous women (PR = 0.66, 95% CI: 0.47-0.93), prenatal care (PR = 0.23, 95% CI: 0.08-0.67), vaginal delivery (PR =0 .41, 95% CI: 0.28-0.60), newborn with birthweight ≥ 2,500g (PR = 0.31, 95% CI: 0.11-0.86) and women who received help from the health team to BF in the delivery room (PR = 0.51, 95% CI: 0.36-0.72). **Conclusion:** Help provided by the health team to breastfeeding at birth, Step 4 of the Baby-Friendly Hospital Initiative, as well as non black women, multiparous women, receiving pre-natal care, vaginal delivery and appropriate birthweight contributed to breastfeeding in the first hour of life.

Keywords: Breastfeeding. Birth. Evaluation. Cross-sectional studies. Newborn. Hospital.

Resumo

Objetivo: Investigar como o passo 4 da Iniciativa Hospital Amigo da Criança foi aplicado, avaliar a prevalência da amamentação na primeira hora após o nascimento e analisar os fatores associados à não amamentação neste período de vida. **Métodos:** Estudo transversal conduzido em alojamento conjunto de maternidade de alto risco na cidade do Rio de Janeiro, com entrevista com amostra de 403 puérperas. A Razão de Prevalência, com seu respectivo intervalo de confiança de 95%, foi estimada a partir de modelo com função de ligação complementar log log, através do programa SPSS15®. **Resultados:** A prevalência de amamentação na primeira hora após o nascimento foi de 43,9%. A análise multivariada evidenciou que foram protegidas contra a não amamentação na primeira hora de vida as mulheres de cor não preta (RP = 0,62; IC 95%: 0,42-0,90), multíparas (RP = 0,66; IC 95%: 0,47-0,93), que fizeram pré-natal (RP = 0,23; IC 95%: 0,08-0,67), com parto normal (RP = 0,41; IC 95%: 0,28-0,60), cujos bebês tiveram peso ao nascer igual ou superior a 2.500g (RP = 0,31; IC 95%: 0,11-0,86) e que receberam ajuda da equipe de saúde para amamentar na sala de parto (RP = 0,51; IC 95%: 0,36-0,72). **Conclusão:** A ajuda prestada pela equipe de saúde à amamentação ao nascimento, que se constitui no "Passo 4 da Iniciativa Hospital Amigo da Criança", bem como a cor materna não preta, a multiparidade, a realização de pré-natal, o parto normal e o peso adequado ao nascer contribuíram para o inicio do aleitamento materno na primeira hora de vida.

Palavras chave: Aleitamento materno. Nascimento. Avaliação. Estudos transversais. Recém-nascido. Hospital.

Introduction

In the early 90's, the "Baby Friendly Hospital Initiative" (BFHI) strategy was created, mobilizing staff from units with obstetric services to change hospital practices and routines in order to promote, protect, and support breastfeeding. Therefore, the "Ten Steps to Successful Breastfeeding"[1] were established. In 1992, in Brazil, the Ministry of Health and the Group for Children Rights Defense adopted the BFHI as a strategy to increase breastfeeding rates[2].

Step 4 of BFHI advocates "putting babies in direct contact with the mother soon after birth for at least an hour and encourage mothers to identify if the baby is ready to breastfeed, offering help if needed"[3]. Breastfeeding should be provided even in the delivery or surgery room, once both mother and child are well, enjoying the moment when mother and baby are alert and interacting. The early skin to skin contact between mother and baby is also associated with a better interaction between the dyad, longer duration of breastfeeding[4], higher levels of blood glucose, better temperature control of the newborn, and the disappearance of the child's crying when held by his or her mother[5,6,7] Moreover, there is an indication of an association between early breastfeeding and exclusive breastfeeding[8].

Brazilian studies have shown that the prevalence of breastfeeding in the first hour of life is around 50% in Baby Friendly Hospitals[9-10], however, in hospitals non-accredited by this initiative the practice is less common, reaching close to one third of babies[10,11]. Few studies have investigated factors associated with breastfeeding in the first hours of life in our environment.[9-13]The purposes of this work are to understand how BFHI Step 4 is applied in a high risk maternity, to investigate the prevalence of breastfeeding in the first hour following birth, and the factors affecting this practice.

Methods

This is a cross-sectional study conducted

from June 15 to September 11, 2009 in a public maternity hospital at a general hospital of the Ministry of Health, part of the High Risk Pregnancy System of Rio de Janeiro.

The study conducted a sample calculation out of the total deliveries made in 2007 in this maternity, approximately 2,700 deliveries, which correspond to 225 deliveries/month (statistics from the Department of Obstetrics). To test the main assumptions chosen in this study, based on the outcome, "non-breastfeeding in the first hour of life", the study used, as the main exposure variable, the cesarean delivery, prevalence of 62.2% of non-breastfeeding in the first hour and a relative risk = 1.3 (95%CI: 1.15-1.46) [9]. Taking in account a 95%CI and an 80% sample power, a sample of 402 women was calculated. There were 577 births during the study period, with 38.6% of cesarean deliveries. The study used the following inclusion criteria: mother hospitalized in rooming-in with her newborn and the birth taking place at the unit. The exclusion criteria included patients who had newborns with gestational age less than 37 weeks, according to the New Ballard score [14] registered by the pediatrician in the book of records of the delivery room; APGAR less than seven in the fifth minute of life and/or some abnormality; situations that could hinder or contraindicate breastfeeding at birth, such as the use of illicit drugs by the mother or HIV positive [15]. After applying these criteria, 403 women remained with childbirth occurred in the period, who were interviewed using a semi-structured questionnaire elaborated according to instrument used in other research[9], comprising identification data, socio-demographic and reproductive profile, and prenatal and childbirth care. The schedule of hospital routines was used to help mothers recall the time of first breastfeeding.

The database was built by EPIINFO® 3.5 and the analyses were held by SPSS15®.

The outcome studied was non-breastfeeding in the first hour of life, categorized in up to 60 minutes and after 60 minutes of birth; the exposure variables were:

- maternal socio-demographic characteristics (age, education, self-reported skin color, work, and number of long term assets),
- reproductive characteristics (presence of a partner, parity, and planned pregnancy),
- characteristics of prenatal care (accomplishment, number of appointments; starting quarter, professional approach on breastfeeding; location breastfeeding was addressed; guidance on non-bottle use),
- characteristics of delivery assistance (type of delivery, baby birth weight, help for breastfeeding at the time of delivery, type of assistance provided, knowledge about breastfeeding in the delivery room, staff asked if the mother wanted to put the baby in the breast, place of occurrence of the first breastfeeding, women consider that staff heard what she said about breastfeeding her child, and satisfaction with hospital services).

The Prevalence Ratio, with its respective confidence interval of 95%, was estimated from model with log log complementary link function. The linking function is preferred for binary events likely to occur very frequent, such as the one observed. The variables with p-value ≤ 0.20 in the bivariate analysis were considered in the modeling process.

In the final model, all variables with a 5% significance level were considered [16].

The study was approved by the Committee for Ethics in Research of Bonsucesso General Hospital (Case No 15/09, approved on 05.08.2009). The women participated in the study after signing the consent form in accordance with Resolution No. 196 of October 10 1996 (CNS 196/96).

We state that, in this work, there was no connection or financing agreement among the authors and companies or people who may have interests in the material addressed in the paper.

Results

The age of the mothers ranged from 13

to 46 years, once 24.3% were adolescents. About 45.1% of women did not conclude elementary school and 26.7% considered themselves black. Just over half (51.9%) of them were working mothers, and 73.2% had more than five long-term assets. About 88.3% of mothers had partners; 33.3% were primiparous and 70.0% had not planned the pregnancy. Among their socio-economic and reproductive features, only the black color (PR = 0.80) and multiparity were protective factors to non-breastfeeding in the first hour of life (Table 1). The group of non-black women consisted of 20.1% who reported themselves as white, 45% mulatto, 5.5% yellow, and 2.5% indigenous.

Underwent prenatal care 93.1% of the women (52.4% began in the first quarter of pregnancy and 55.6% received information on breastfeeding during this period), 56.6% went to 6 to 12 appointments. Undergoing prenatal care and guidance on breastfeeding in group proved to be protective against non-breastfeeding in the first hour of life (Table 2).

The prevalence of breastfeeding in the first hour of life was 43.9% (n = 177). Were breastfed after the first hour of life 72.1% of the babies delivered by caesarean section and 47.5% of the babies born by normal

Table 1 - Non-breastfeeding in the first hour after birth among rooming-in mothers in a high risk hospital according to socioeconomic and reproductive variables. Rio de Janeiro City, 2009.
Tabela 1 - *Não amamentação na primeira hora pós-parto em mulheres em alojamento conjunto em hospital de alto risco segundo características socioeconômicas e reprodutivas. Município do Rio de Janeiro, 2009.*

	Frequency		Non-breastfeeding in the first hour of life		
	n	%	%	PR	95%CI
Age (n=403)					
Adolescent	98	24.3	60.2	1	
Adult	305	75.7	54.7	0.91	0.75-1.1
Education (n=401)					
0 to 7 years of study	181	45.1	56.4	1	
8 to 14 years of study	220	54.9	55.9	0.99	0.83-1.18
Mother´s skin color (n=402)*					
Black	108	26.7	65.7	1	
Non-Black	294	72.9	52.7	0.80	0.67-0.95
Working mothers (n=403)					
No	194	48.1	57.2	1	
Yes	209	51.9	55.0	0.97	0.82-1.15
Number of assets (n=43)					
1 to 4 assets	108	26.8	59.2	1	
5 or more assets	295	73.2	54.9	0.93	0.77-1.12
Has a partner (n=403)					
No	47	11.7	63.8	1	
Yes	356	88.3	55.1	0.86	0.68-1.09
Parity (n=403)*					
Primiparous mother	134	33.3	61.9	1	
Multiparous (two or more children)	269	66.7	53.1	0.86	0.72-1.02
Pregnancy planned (n=403)					
No	282	70.0	56.3	1	
Yes	121	30.0	55.3	0.98	0.81-1.19

* $p \leq 0,20$.

Table 2 - Non-breastfeeding in the first hour after birth among rooming-in mothers in a high risk hospital according to prenatal care variables. Rio de Janeiro City, 2009.
Tabela 2 *- Não amamentação na primeira hora pós-parto em mulheres do alojamento conjunto de hospital de alto risco segundo características da assistência pré-natal. Município do Rio de Janeiro, 2009.*

	Frequency		Non-breastfeeding in the first hour of life		
	n	%	%	PR	95%CI
Underwent prenatal care (n=403)*					
No	28	6.9	85.7	1	
Yes	375	93.1	53.9	0.63	0.53 - 0.75
Number of prenatal appointments (n=403)					
From 0 to 5 appointments	198	49.2	55.6	1	
From 6 to 12 appointments	205	50.8	56.6	1.02	0.83 -1.25
Quarter of prenatal beginning (n=375)**					
Third quarter	12	3.2	58.3	1	
Second quarter	152	40.5	56.6	0.99	0.69 - 1.41
First quarter	211	56.3	51.7	0.96	0.67 - 1.36
Mentioned breastfeeding in prenatal (n=375)**					
No	166	44.3	54.8	1	
Yes	209	55.7	53.1	0.99	0.88-1.12
Type of guidance to breastfeeding (n=403)					
No guidance	194	48.1	59.3	1	
In group *	119	29.5	47.1	0.79	0.63-0.99
In the appointment	90	22.3	61.1	1.05	0.86 - 1.29
Bottle should not be given (n=374)					
No	162	43.3	53.0	1	
Yes	212	56.7	54.7	1.03	0.85 -1.25

* $p \leq 0,20$.
**Only the ones who underwent prenatal care. ** *Só as que fizeram pré-natal*.

delivery. The normal delivery, the appropriate birthweight, help for breastfeeding at labor time, especially when the type of help was to facilitate the newborn's contact with the mother's breast, and if the mother was questioned about her desire to put her baby on her breast showed protection against the outcome non-breastfeeding in the first hour (Table 3).

In the multivariate model (Table 4), the variables that were statistically significant protective factors for non-breastfeeding in the first hour of life were: non-black women (PR = 0.62), multiparity (PR = 0.66), undergoing pre-natal care (PR= 0.23), normal delivery (PR = 0.41), proper birth weight (PR = 0.31) and help from staff to breastfeed in the delivery room (PR = 0.51).

Discussion

The interviewed mothers that underwent prenatal care were strongly protected regarding breastfeeding their children in the first hour of life. The prenatal care should include comprehensive health care, disease prevention, and commitment to quality of life of the dyad. Moreover, in a research conducted in Guinea-Bissau [17], one of the factors that contributed to the delay of first breastfeeding was the absence of undergoing prenatal care (p = 0.0001).

Table 3 – Non-breastfeeding in the first hour after birth among rooming-in mothers in a high risk hospital according to variables related to birth care. Rio de Janeiro City, 2009.
Tabela 3 *– Não amamentação na primeira hora pós-parto em alojamento conjunto em hospital de alto risco segundo características da assistência ao parto. Município do Rio de Janeiro, 2009.*

	Frequency	Non-breastfeeding in the first hour of life			
	n	%	%	PR	95%CI
Type of delivery (n=403)*					
C-section	140	34.7	72.1	1	
Normal	263	65.3	47.5	0.66	0.56-0.78
Baby weight at birth (n=403)*					
Less than 2500g (1850-2499)	22	5.5	81.8	1	
More or equal to 2500g (2500 - 4900)	381	94.5	54.5	0.67	0.54-0.83
At delivery, staff offered help to breastfeeding (n=403)*					
No	298	73.9	62.7	1	
Yes	105	26.1	37.1	0.59	0.45-0.77
Type of help (n=105)**					
Skin to skin contact	54	51.4	53.7	1	
Baby´s mouth to breast	51	48.6	19.6	0.37	0.20-0.67
Mother knew she could breastfeed in delivery room? (n=403)					
No	228	56.6	57.4	1	
Yes	175	43.4	54.2	0.94	0.79-1.13
Anyone asked if mother wanted to put baby on her breast? (n=403)**					
No	343	85.1	59.4	1	
Yes	60	14.9	36.6	0.62	0.44-0.87
Did they listen what you said about breastfeeding? (n=403)					
No	48	11.9	62.5	1	
Yes/more or less	355	88.1	55.2	0.88	0.70-1.12
Satisfaction with the service (n=403)					
No	44	10.9	52.2	1	
Yes	359	89.1	56.5	1.08	0.80-1.46

*$p \leq 0,20$.
** Non-independent variables concerning to the variable:"At delivery, staff offered help to breastfeeding"
*** Variáveis não independentes em relação à variável "Na hora do parto ofereceram ajuda para amamentar.*

Vieira et al[13], in 2010, reported an association between breastfeeding in the first hour of life and having received guidance on the advantages of breastfeeding in the prenatal period, indicating that this care facilitates the preparation for breastfeeding.

Our results showed that multiparous women were more protected against

Table 4 - Multivariate analysis of factors associated with non-breastfeeding in the first hour after birth among rooming-in mothers in a high risk hospital. Rio de Janeiro City, 2009.
Tabela 4 *- Analise multivariada dos fatores associados à não amamentação na primeira hora pós-parto em mulheres em alojamento conjunto em hospital de alto risco. Município do Rio de Janeiro, 2009.*

	Adjusted PR	95%CI
Mother´s skin color*		
Black	1	
Non-black	0.62	0.42 - 0.90
Parity*		
Primiparous mother	1	
Multiparous mother	0.66	0.47 - 0.93
Underwent prenatal care*		
No	1	
Yes	0.23	0.08 - 0.67
Type of delivery*		
C-section	1	
Normal	0.41	0.28 - 0.60
Baby weight at birth*		
Less than 2500g	1	
More or equal to 2500g	0.31	0.11 - 0.86
At delivery, staff offered help to breastfeeding*		
No	1	
Yes	0.51	0.36 - 0.72

* $p \leq 0,05$

non-breastfeeding in the first hour, similar to the results found in a research conducted in the hospital network of the city of Rio de Janeiro[11], suggesting that the larger the number of children, the faster the first breastfeeding occurs, possibly because of the doubts and insecurities of primiparous women. However, some international studies showed no association between parity and breastfeeding within one hour [18,19].

Moreover, socio-economic factors such as education and skin color showed contradictory results in the literature. In our study, consistent with other findings[9] also in Rio de Janeiro, women who reported their skin color as non-black were protected concerning breastfeeding in the first hour of life. However, research conducted in Pelotas, by Silveira et al[10] pointed non-white mothers breastfeeding earlier. In this study, and in a study by Boccolini et al, at 47 maternity hospitals of Rio de Janeiro[12], education was not associated with the outcome, while in Pelotas[10] mothers with more education were those who started breastfeeding later, and these mothers, who were white and with more education, were the ones most subjected to caesarean sections.

According to studies reported, in the African Brazilian population[20], the population group with black or brown skin color, from the economic and social standpoint, is the poorer, less educated, and living in areas with low sanitation treatment. A research conducted with mothers, in maternity hospitals in Rio de Janeiro between 1999 and 2001, found inequalities that have occurred from access to prenatal care up to labor for black patients[21]. In our research, conducted in a hospital from the Brazilin public healthcare system (SUS), different from the population study of Pelotas[10], the fact that black women have shown less prevalence of breastfeeding in the first hour is one more negative indicator to penalties already imposed on these women at time of delivery.

The cesarean section, in the present investigation, was responsible for a high incidence of late breastfeeding. Literature has consistently shown it to be a risk factor to breastfeeding at birth[9-13], being recognized as such by the World Health Organization itself, advocating that at baby-friendly hospitals, at least 80% of mothers with normal birth and 50% of those subjected to caesarean section should receive help to place the baby in skin to skin contact to start breastfeeding[3]. In normal delivery, protector for the outcome, the more active participation of women and the greater possibilities of the baby placed naked in direct contact with her body in the first minutes after birth, can help her to recognize on the child the signs of being ready to breastfeed.

The prevalence found for breastfeeding in the first hour (43.9%) was very close to that shown by a recent population survey in Brazil (43%)[22]. Although the hospital studied is in qualifying process to be approved as Baby-Friendly, its staff still lacks uniformity in delivery care. Routine procedures performed with healthy newborns, such as the suction of the airways and pharynx, measuring length and weight and body care (bathing) may interfere with breastfeeding at birth, resulting in loss of effective contact between mother and baby. These immediate unnecessary interferences on the newborn are common practices despite the recommendation that in the delivery room, mother and child should not be separated unless indicated by a medical reason[3]. The rates of breastfeeding in the first hour of life practiced for women with normal delivery (52.5%) and cesarean section (27.9%) are still far from what BFHI[3] established and WHO/UNICEF[1] recommended.

An even lower prevalence of breastfeeding in the first hour was found in a study that investigated factors that interfered with this practice in a representative sample of maternity hospitals in the city of Rio de Janeiro, once only 26.4% of mothers of newborns with low and medium risk born from normal delivery, and 5.8% of those submitted to cesarean section breastfed in the first hour of life.[12]

Less than half of the women knew it was possible to breastfeed in the delivery room (43.4%), but even in these cases the professionals were not questioned or their help requested. The practice of Step 4 is still little applied by the hospital staff, and for 85.1% of the mothers, it was not asked if they wanted to breastfeed at that time. The Ministry of Health (2005)[23] indicates that the mother-baby bond must be ensured through skin contact, even in mothers who cannot breastfeed, immediately after pediatric care, when needed in the specific situation. At this important moment, the woman is undervalued in her emotions, and the main concern is with the birth of a healthy child[24]. There must be ongoing education for professionals to improve work processes, with more positive results.

A solution concerning the reduction of first breastfeeding time, found in Nigeria, was the presence of a companion during labor, especially in large hospitals[25]. This action has been thought of in our country, and the law of the companion was regulated by Administrative Rule 2418 of December 2nd 2005[26].

Letting the woman know that she can breastfeed her baby in the delivery room, asking if she wants to do so and helping her to hold her baby, and to identify whether it

is time to breastfeed the baby, fundamental help from the health staff, are actions that involve assistance to newborns and are recognized as having significance in the protection of breastfeeding in the first hour of life[3].

We conclude that BFHI Step 4 was performed to less than half of the clientele, at levels well below those recommended by WHO/UNICEF[1]. Besides maternal socio-economic and reproductive protection factors, such as non-black skin color and multiparity, undergoing pre-natal care, normal delivery, appropriate birthweight of the newborn, and being offered help to breastfeed at delivery favored breastfeeding the first hour of life.

Acknowledgment: To Valentim Magalhães, whose scholarship from the Scientific Initiation Institutional Program (PIBIC) enabled his assistance in applying the questionnaires and to Professor Dr Saint Clair Gomes Júnior for the relevant assistance with statistical analysis.

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Received: 26/07/11
Final version: 19/3/12
Approved: 10/07/12