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ORIGINAL ARTICLE / *ARTIGO ORIGINAL*

Factors related to health services determine breastfeeding within one hour of birth in the Federal District of Brazil, 2011

Fatores ligados aos serviços de saúde determinam o aleitamento materno na primeira hora de vida no Distrito Federal, Brasil, 2011

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ABSTRACT: ***Objective:*** To identify factors associated with breastfeeding in the first hour of life. ***Methods:*** A cross-sectional study conducted among mothers and children under one year of age, who attended the second stage of the polio vaccination campaign in the Federal District, Brazil, in 2011. The sample was composed of 1,027 pairs of mothers and children. Breastfeeding in the first hour of life was considered as the dependent variable; and the independent variables were: socio-demographic characteristics of the mother, prenatal, delivery and postpartum care, reference to physical or verbal violence/neglect during delivery, and children health. Unadjusted and adjusted prevalence ratios (PR) were used as measures of association, calculated by Poisson regression. ***Results:*** The prevalence of breastfeeding in the first hour of life was 77.3%. Inadequate prenatal care (PR = 0.72), cesarean section (PR = 0.88) and no access to rooming-in after birth (PR = 0.28) were factors that interfered negatively in breastfeeding in the first hour of life. No factor was associated with breastfeeding in the first hour of life for mother and children. ***Conclusions:*** Factors related to health services such as prenatal care, type of delivery and postpartum rooming-in interfered with breastfeeding in the first hour of life, indicating that health services, as well health professional practices were major determinants the breastfeeding in the first hour of life.

Keywords: Breast feeding. Mass vaccination. Health services. Maternal and child health. Prenatal care. Rooming-in care.

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RESUMO: ***Objetivo:*** Identificar os fatores associados ao aleitamento materno na primeira hora de vida. ***Métodos:*** Estudo transversal, realizado junto às mães e crianças menores de um ano de idade, que compareceram à segunda etapa da campanha de poliomielite no Distrito Federal, Brasil, em 2011. A amostra estudada foi de 1.027 pares (mães e filhos). Considerou-se como variável dependente o aleitamento materno na primeira hora de vida e, como variáveis independentes, as características sociodemográficas da mãe, assistência ao pré-natal, parto e puerpério, referência à violência física, verbal e negligência no momento do parto e saúde da criança. As razões de prevalência (RP), brutas e ajustadas, foram utilizadas como medida de associação, calculadas por regressão de Poisson. ***Resultados:*** Foi encontrada prevalência de 77,3% de aleitamento materno na primeira hora de vida. Não ter realizado pré-natal de forma adequada (RP = 0,72), ter feito parto cesáreo (RP = 0,88) e mãe e filho não permanecerem em alojamento conjunto após o parto (RP = 0,28) foram fatores que interferiram negativamente no aleitamento materno na primeira hora. Nenhuma característica materna e da criança esteve associada ao aleitamento materno na primeira hora. ***Conclusão:*** Fatores ligados aos serviços de saúde, como assistência ao pré-natal, tipo de parto e alojamento conjunto, interferiram no aleitamento materno na primeira hora, indicando que as práticas dos serviços e dos profissionais de saúde foram os principais determinantes do aleitamento materno na primeira hora.

Palavras-chave: Aleitamento materno. Vacinação em massa. Serviços de saúde. Saúde materno-infantil. Cuidado pré-natal. Alojamento conjunto.

INTRODUCTION

The World Health Organization (WHO) recommends that immediately after delivery the mother and child skin to skin contact should be allowed. In this opportunity, mothers should be oriented on how to recognize the moment when their children are ready for breastfeeding for the first time[1,2].

Breastfeeding (BF) guarantees children the nutrients necessary for their healthy growth and development and its benefits can be seen beyond early childhood. A recent study conducted in Pelotas, Rio Grande do Sul - Brazil, showed that children who were breastfed for 12 months or more presented higher intelligence quotient, educational level and income at 30 years of age, compared to children who were breastfed for less than one month[3].

Early initiation of breastfeeding in the first hour of life provides the newborn immunological and psychosocial benefits, strengthens the mother-child bond[4], and increases the child's chance to receive colostrum, which is highly nutritious, easily digestible and presents substantial immunological properties for this phase of life[5]. Therefore, breastfeeding within one hour of birth is considered an important protective factor against newborn mortality[6]. The main findings of a study conducted in Ghana, Africa, from 2003 to 2004, showed that 16.3% of neonatal deaths could be prevented if breastfeeding initiated on the first day of life and 22.3% if breastfeeding occurred in the first hour of life[7].

Systematic literature review, conducted by Esteves et al.[8] indicated that the prevalence of breastfeeding within one hour of birth ranged from 11.4% in one province in Saudi Arabia[9] to 83.3% in Sri Lanka[10]. Data from the 2nd Research on the Prevalence of Breastfeeding in Brazilian State Capitals and in the Federal District (DF) showed that 67.7% of children breastfed in the first hour of life in the Brazilian cities in 2008[11]. The Research Born in Brazil, conducted in the

five geographical regions of the country in 2011 and 2012, found a prevalence of 50.4% of breastfeeding within one hour of birth among newborns in the Midwest region[12].

The health team's role is to assist and support the mother and the child in order to guarantee that the breastfeeding within one hour of birth occurs adequately[1,2]. The literature has indicated that the practices of health professionals[8,13-18], as well as the organization and management of health services, are essential to the initiation of breastfeeding immediately after childbirth[12]. Mothers who got the prenatal care[13], who were counseled during prenatal about breastfeeding[18] and who received postpartum assistance from health professionals for breastfeeding were more likely to breastfeed their children in the first hour[16,17]. With regard to health services, allowing companion in childbirth, having deliveries paid by the Unified Health System (SUS) and in hospitals that received the title of Child Friendly Hospital Initiative (IHAC)[12] were appointed as stimulating factor for the breastfeeding within one hour of birth.

Few studies have investigated the factors associated with breastfeeding within one hour of birth in the Brazilian population[15,18-22] and none of them were conducted in the Midwest region. This study aimed at investigating the prevalence of breastfeeding in the first hour of life, as well as the factors that interfered in this practice in the Federal District, the country capital, in 2011.

METHODS

STUDY DESIGN

This is a cross-sectional study, conducted in August 2011, during the second phase of the polio campaign in the Federal District. The research subjects were mother-child pairs, aged 0 to 12 months, who attended health units selected as the sample design.

The sample was applied by conglomerate with selection in two stages and probability proportional to cluster size. A conservative prevalence of 50% was considered to calculate the sample size, due to the various investigated indicators, in addition to the confidence level of 95% and maximum sampling error of 4%. The calculation resulted in a sample size of 1,170 mother-child pairs, after adjusting for a sample loss of up to 30% and correcting the design effect (deff) equal to 1.5.

The selection of the first sampling stage (vaccination units) has been carried out in order to have represented all administrative regions of the Federal District (DF) that had health centers eligible to participate in the survey according to the following:

1. be located in urban area;
2. be stationary vaccination units;
3. hold the data from June 2010 multi-vaccination campaign in Federal District.

The selection of the eligible vaccination units resulted in a total of 25 units to be analyzed, distributed in 21 of the 30 administrative regions of the Federal District in 2011.

The second sampling stage referred to the systematic selection of mother and child pairs in the vaccination queue on the date of the survey. The sample interval for each selected

unit was calculated according to the attendance estimate based on the number of children vaccinated at that unit in the previous year's campaign. The pre-determined interval ranged from 1:2 to 1:10 children, to achieve the target sample in each vaccination unit. The coordinating team monitored, throughout the data collection day, the achievement of the sample size in each surveyed unit. In cases where the search for vaccination was lower than expected, the selection range was lowered to reach the target sample at shorter intervals to the pre-determined, which occurred in 9 of 25 vaccination units (36.0 %). However, the inclusion criteria and the randomness of the sample were preserved.

The mother-child pairs eligible for this study were those whose children were younger than one year and was accompanied by his or her mother; must have been resident in the administrative region where the vaccination unit was located; should not have presented disease or immobilization that interfered with measurement of weight and height of both; should not be twin and or an adopted son or daughter. If the eligible mother took more than one child under one year old to the vaccination unit, the eldest was selected to participate in the study. For the analysis, 143 mother-child pairs were excluded due to inconsistent or inexistent data about the breastfeeding within one hour of birth. Mother-child pairs remaining in the study was equivalent to 1,027.

The weighting factor was calculated according to the number of children under one year of age vaccinated in the second phase of the polio campaign in the Federal District, considering the data provided by the Federal District Health Department, in addition to the sample design, which considered the vaccination units as the primary sampling units. The coverage of the second phase of the polio vaccination campaign for the child under 12 months, held in 2011 in the Federal District when the data was collected, was equivalent to 97.9%, ranging from 67, 1% in the administrative region Asa Norte (North Wing) to 151.1% in the administrative region Lago Norte (North Lake)[23]. The high coverage ratio contributes to the reduction of the selection bias in such data collection strategy[24].

DATA COLLECTION

A pre-tested form was used to the data collection, adapted from the Neonatal Call held in the Brazil's Legal Amazon and Northeast regions[25]. The form was applied to the child's mother, in addition to a module on violence at birth[26]. Interviewers who were students or health professionals, using a Personal Digital Assistant (PDA), digitally filled in the form. The survey investigated several factors related to prenatal, childbirth, women's and child's health. In the present study we used the questions on socio-demographic characteristics of the mother (age, educational level and race); prenatal care (adequate prenatal care and evaluation of the mother about the quality of the prenatal care received), delivery care (type of labor and delivery service, type of delivery, presence of companion during labor, childbirth and postpartum, violence during delivery and evaluation of the user on the quality of the delivery care) and postpartum care (rooming-in and breastfeeding within one hour of birth); children's health and their characteristics (the child's gender, birth weight, gestational age and Apgar score at 5 minutes after birth).

CLASSIFICATION OF STUDY VARIABLES

The dependent variable of this study was breastfeeding in the first hour of life. It was identified by the mother's answer to the following question: "Was the child placed in the chest to breastfeed in the first hour of life, soon after birth?". The responses should be classified in "no" or "yes".

Maternal age was classified into four age groups: 14 to 19, 20 to 29, 30 to 34 and ≥ 35 years of age. Maternal education was classified into three levels: 0 to 8, 9 to 11 and ≥ 12 years of schooling. Race or skin color was classified into three categories: white, black or yellow / indian and was considered a representative of the socioeconomic status.

Conformity of assistance in prenatal care was classified as the model proposed by Leal et al.[27], which were based on process indicators of the National Program of Prenatal Humanization (PHPN). Thus, prenatal care has been classified into two categories. Adequate prenatal care was considered when the woman met the 11 established criteria as follows:

1. have started prenatal care in the first trimester;
2. have completed six or more consultations;
3. weight was measured at every visit;
4. blood pressure was checked at every visit;
5. urine test was conducted;
6. underwent a complete blood count (CBC) test;
7. blood glucose test was conducted;
8. test for syphilis was performed and the result was available within 15 days;
9. underwent a test for acquired immunodeficiency syndrome (AIDS) and received the result within 15 days;
10. was counseled about breastfeeding; and
11. received guidance on the place for delivery.

Prenatal care was considered inadequate in the absence of any of these items. The evaluation of the mother about the quality of prenatal care and childbirth was classified as very good/good, satisfactory or poor/very poor. The type of birth was categorized as the type of delivery in two categories: vaginal or cesarean.

The indicators of violence on parturient women by health professionals were analyzed according to the method used by Souza[26]. Physical violence was considered when the interviewed mother answered 'yes' to one of the following questions: During labor any of the health professionals:

- Conducted the internal pelvic exam painfully?;
- Hit you?;
- Pushed you?;
- Tied you?

Verbal violence was identified if the mother answered 'yes' to any of these questions: During labor any of the health professionals:

- Yelled at you?;
- Said something like: stop crying! Will i see you again next year?;
- When you got laid you did not cry, nor called mom. Why are you crying now?;
- If you continue screaming i will leave!;
- If you continue screaming you will harm your baby. Will he or she be born deaf?

Neglect was identified if the mother answered 'yes' to one of the following questions: Any of the health professionals:

- Failed to provide relief for your pain?;
- Denied care?;
- Did not inform you about procedures you underwent?

Physical and verbal violence and neglect were characterized as 'no', when the mother answered 'no' to all questions of each block.

With regard to the characteristics of the children, they were classified as underweight children when the birth weight was < 2,500 g; gestational age was classified into three categories: pre-term, when the child was born before the 37th week of pregnancy; term, when the child was born between the 37th and 41st week of pregnancy; post-term, in case the birth have occurred after the 42nd week[28]. The Apgar score at 5 minutes was classified into two categories: 8-10 (without asphyxia) and less than 8 (with asphyxia in some degree)[29].

DATA ANALYSIS

All estimates were calculated with post-stratification weights. Initially, we calculated the distribution of population according to the variables studied with a 95% confidence interval (95%CI). The prevalence of breastfeeding within one hour of birth was calculated according to the socio-demographic characteristics of the mother, prenatal care, childbirth and postpartum, reference to physical, verbal violence and neglect during childbirth and child health.

We then calculated the prevalence ratios (PR) for all study variables, crude and adjusted, by log-linear model (Poisson regression) considering 95%CI and $p < 0.05$. In the ratio of adjusted prevalence, we have included all study variables in the model. For the calculation of the adjusted rations, breastfeeding within one hour of birth was considered as the dependent variable and all other variables as independent, establishing as reference category the category presenting greater protection for breastfeeding in the first hour of life. Data analysis was performed in the statistical software Stata, version 12.0, using survey commands that consider the sample complexity.

ETHICAL ASPECTS

The research named "Chamada Neonatal: diagnóstico das condições de saúde e da linha de cuidado à saúde da população materno infantil no Distrito Federal (DF)" was

approved by the Ethics Committee of the Universidade de Brasília, Protocol number 130/10 of February 9, 2011. All mothers participating in the survey signed the Informed Consent form.

RESULTS

Among the 1,027 mothers interviewed, 77.3% breastfed in the first hour of life. The majority of the sample did prenatal non-appropriately (78.4%), but assessed the quality of their prenatal care as good and very good (85.9%). With regard to the care during birth, 61.5% of deliveries were cesarean. Verbal violence by health professionals during childbirth was reported by 17.8% of the mothers, followed by physical violence (17.3%) and neglect (16.7%); On the other hand, 80.0% of women rated the quality of delivery care as good and very good. Regarding the characteristics of children under 1 year of age, 91.8% were born with weight equal or greater than 2,500 g and the majority born at term (80.7%) (Table 1). All the women who had appropriate prenatal care, breastfed

Table 1. Mother's socio-demographic characteristics, prenatal, delivery, postpartum health assistance, reference to violence at delivery and child health. Federal District, Brazil, in 2011.

Characteristics*	%**	95%CI
Maternal Age (in years) (n = 1,027)		
≥ 35	21.7	17.8 – 25.6
30 to 34	23.2	19.6 – 26.9
20 to 29	40.9	36.6 – 45.2
14 to 19	14.1	10.6 – 17.7
Maternal Educational Level (in years) (n = 1,027)		
≥ 12	37.6	33.4 – 41.9
9 to 11	43.3	38.9 – 47.8
0 to 8	19.0	15.3 – 22.8
Maternal Race/Color (n = 1,027)		
White	35.2	31.0 – 39.4
Black	59.9	55.6 – 64.3
Yellow/Indian	4.9	2.9 – 6.9
Adequate Prenatal (n = 1,027)		
Yes	21.6	18.2 – 25.1
No	78.4	74.9 – 81.8

Continue...

Table 1. Continuation.

Characteristics*	%**	95%CI
User evaluation on the quality of Prenatal care (n = 1,017)		
Very good/Good	85.9	82.9 – 88.9
Satisfactory	11.2	8.5 – 13.9
Poor/Very poor	2.9	1.5 – 4.3
Type of service for the childbirth (n = 1,027)		
Public Service	57.4	53.1 – 61.7
Private Service	42.6	38.3 – 46.9
Type of delivery (n = 1,027)		
Vaginal	38.5	34.0 – 42.9
Cesarean	61.5	57.0 – 65.9
Presence of companion		
In the prenatal (n = 1,027)		
Yes	70.5	66.5 – 74.5
No	29.5	25.5 – 33.5
In the delivery (n = 1,027)		
Yes	48.6	44.2 – 53.1
No	51.4	46.9 – 55.8
In the postpartum (n = 1,027)		
Yes	70.0	65.8 – 74.3
No	30.0	25.7 – 34.2
Physical violence during delivery (n = 1,022)		
Yes	17.3	13.8 – 20.8
No	82.7	79.2 – 86.2
Verbal violence during delivery (n = 1,022)		
Yes	17.8	14.2 – 21.4
No	82.2	78.6 – 85.8
Neglect during delivery (n = 1,022)		
Yes	16.7	13.1 – 20.2
No	83.3	79.8 – 86.9
Rooming-in (n = 1,027)		
Yes	89.9	87.5 – 92.2
No	10.1	7.8 – 12.5

Continue...

Table 1. Continuation.

Characteristics*	%**	95%CI
Breastfeeding within one hour of birth (n = 1,027)		
Yes	77.3	73.8 – 80.8
No	22.7	19.2 – 26.2
User evaluation on the quality of Delivery care (n = 1,027)		
Very good/Good	80.0	76.2 – 83.7
Satisfactory	12.1	8.9 – 15.2
Poor/Very poor	8.0	5.5 – 10.4
Children gender (n = 1,027)		
Male	48.7	44.2 – 53.2
Female	51.3	46.8 – 55.8
Birth Weight (n = 1,009)		
≥ 2,500 g	91.8	89.6 – 94.0
< 2,500 g	8.2	6.0 – 10.4
Gestational age (n = 1,027)		
Term	80.7	77.3 – 84.0
Pre-term	7.2	5.2 – 9.2
Post-term	12.1	9.3 – 15.0
Apgar 5 minute (n = 1,027)		
≥ 8	91.5	89.0 – 94.0
< 8	8.5	6.0 – 11.0

*Unweighted sample; **prevalence adjusted to represent all children under one year of age vaccinated in the Federal District in 2011; 95%CI: 95% confidence interval.

within one hour of birth. The prevalence of breastfeeding within the first hour of life was also significantly higher among women who had vaginal delivery (84.4%), which stayed rooming-in with their children in the postpartum (83.8%) and among those with lower education (82.0%). Children born with weight equal or greater than 2,500 g had a higher prevalence of breastfeeding within one hour of birth, as well as those who had a companion in the postpartum. After adjusting for all variables of the study, it was observed that a non-proper prenatal and cesarean delivery decreased the probability of breastfeeding within one hour of birth by 28 and 12%, respectively. Standard care for newborn after delivery (no rooming-in) reduced by 72% the probability of breastfeeding within one hour of birth (Table 2).

Table 2. Prevalence and prevalence ratio of breastfeeding in the first hour of life according to socio-demographic characteristics of the mother, prenatal care, delivery, postpartum health assistance, reference to violence at delivery and child health. Federal District, Brazil, in 2011.

Characteristics	Breastfeeding within one hour of birth							
	%*	95%CI	Crude PR	95%CI	p-value	Adjusted PR **	95%CI	p-value
Maternal Age (in years)								
≥ 35	79.0	70.1 – 87.9	1			1		
30 to 34	75.9	70.3 – 81.6	0.96	0.84 – 1.10	0.6540	0.97	0.85 – 1.10	0.0750
20 to 29	75.7	68.6 – 82.8	0.96	0.83 – 1.11		1.00	0.88 – 1.15	
14 to 19	80.5	73.5 – 87.4	1.02	0.88 – 1.17		1.09	0.96 – 1.25	
Maternal Educationallevel (in years)								
≥ 12	72.6	66.3 – 78.9	1			1		
9 to 11	79.3	74.6 – 84.1	1.09	0.98 – 1.21	0.0380	1.10	0.97 – 1.26	0.0310
0 to 8	82.0	75.1 – 89.0	1.13	1.00 – 1.28		1.16	0.99 – 1.36	
Maternal Race/Color								
White	72.7	66.1 – 79.3	1			1		
Black	81.2	77.3 – 85.0	1.12	1.01 – 1.24	0.4090	1.08	0.99 – 1.19	0.4880
Yellow/Indian	63.3	43.5 – 83.1	0.87	0.63 – 1.21		0.92	0.74 – 1.16	
Adequate Prenatal								
Yes	100.0	0.0 – 0.0	1		< 0.001	1		< 0.001
No	71.0	66.7 – 75.4	0.71	0.67 – 0.76		0.72	0.67 – 0.78	
User evaluation on the quality of prenatal care								
Very good/Good	78.7	75.0 – 82.4	1			1		
Satisfactory	69.2	57.4 – 80.9	1.08	0.98 – 1.19	0.1200	0.88	0.75 – 1.03	0.2590
Poor/Very poor	69.1	48.2 – 90.0	1.08	0.92 – 1.27		1.06	0.89 – 1.27	
Type of Service for childbirht								
Public	79.6	75.0 – 84.1	1		0.1370	1		0.5780
Private	74.2	68.9 – 79.6	0.93	0.85 – 1.02		0.97	0.83 – 1.12	
Type of delivery								
Vaginal	84.4	79.7 – 89.1	1		0.0010	1		0.0100
Caesarean	72.9	68.1 – 77.6	0.86	0.79 – 0.94		0.88	0.80 – 0.97	
Companion at prenatal								
Yes	77.2	73.0 – 81.5	1		0.9370	1		0.1390
No	77.5	71.5 – 83.5	1.00	0.91 – 1.10		0.93	0.84 – 1.03	
Companion at delivery								
Yes	76.4	71.4 – 81.3	1		0.6050	1		0.6640
No	78.2	73.3 – 83.1	1.02	0.94 – 1.12		0.95	0.84 – 1.08	

Continue...

Table 2. Continuation.

Characteristics	Breastfeeding within one hour of birth							
	%*	95%CI	Crude PR	95%CI	p-value	Adjusted PR **	95%CI	p-value
Companion at postpartum								
Yes	75.1	70.8 – 79.5	1		0.0370	1		0.5650
No	82.4	77.1 – 87.7	1.10	1.01 – 1.20		1.03	0.94 – 1.14	
Physical violence during delivery								
Yes	78.5	74.7 – 82.2	1		0.1840	1		0.6550
No	71.4	62.1 – 80.8	0.91	0.79 – 1.05		0.96	0.85 – 1.08	
Verbal violence during delivery								
Yes	77.0	73.1 – 80.9	1		0.7050	1		0.6960
No	78.7	70.8 – 86.6	1.02	0.91 – 1.14		1.03	0.92 – 1.15	
Neglect during delivery								
Yes	78.1	74.3 – 81.9	1		0.3440	1		0.8130
No	73.1	63.8 – 82.5	0.94	0.82 – 1.07		0.98	0.88 – 1.09	
Rooming-in								
Yes	83.8	80.6 – 87.1	1		0.001	1		0.001
No	19.3	10.7 – 27.9	0.23	0.15 – 0.36		0.28	0.18 – 0.44	
User evaluation on the quality of delivery care								
Very good/Good	77.1	73.1 – 81.0	1		0.8840	1		0.5610
Satisfactory	79.3	69.5 – 89.0	1.03	0.90 – 1.18		1.05	0.95 – 1.16	
Poor/Very poor	76.7	65.5 – 87.9	0.08	0.85 – 1.16		1.05	0.90 – 1.22	
Children gender								
Male	74.6	69.5 – 79.7	1		0.1350	1		0.9719
Female	79.9	75.1 – 84.7	1.07	0.98 – 1.17		1.06	0.98 – 1.14	
Birth Weight								
≥ 2,500 g	80.1	76.6 – 83.6	1		0.001	1		0.2490
< 2,500 g	45.7	32.0 – 59.4	0.57	0.42 – 0.77		0.90	0.74 – 1.11	
Gestational Age								
Term	79.4	75.6 – 83.2	1		0.2270	1		0.2370
Pre-term	51.2	37.2 – 65.2	0.64	0.49 – 0.85		0.90	0.75 – 1.08	
Post-term	78.9	69.5 – 88.4	0.99	0.87 – 1.13		0.96	0.86 – 1.08	
Apgar 5 minute								
≥ 8	79.6	76.2 – 83.1	1		0.0050	1		0.0940
< 8	52.2	37.0 – 67.4	0.66	0.49 – 0.88		0.83	0.68 – 1.02	

*Adjusted prevalence to represent all children under one year old vaccinated in the Federal District in 2011; 95% confidence interval; PR: prevalence ratio; **prevalence ratio adjusted for all variables of the model.

DISCUSSION

In this study, the factors that negatively interfere in the breastfeeding within the first hour of life, after adjusting for all variables in the model, are related to the prenatal care (not having received prenatal care appropriately), the delivery (Caesarean section) and postpartum (standard care for newborn instead of rooming-in).

The prevalence of breastfeeding within one hour of birth in this study in the Federal District (77.3%) is above the prevalence found in Brazil, in the Midwest region and in the Federal District itself in previous studies. The 2nd Research on Breastfeeding Prevalence, conducted in 2008, showed that 67.7% of all children were breastfed in the first hour of life. In the Federal District the observed prevalence was 72.5%[30]. Data from the 2006 National Demographic and Health Survey (PNDS) showed that 43.0% of children breastfed in the first hour of life in Brazil. In the Midwest, this prevalence was 39.7%. However, a comparison of data from this study with the PNDS is limited, since the age of the children included in the two studies are different[31].

Among the women interviewed in this study, 21.6% did not undergo prenatal properly, according to National Program of Prenatal Humanization (PHPN) criteria. However, 85.9% of respondents assessed the quality of care for prenatal care as very good or good. Leal et al.[27], in a study conducted in the Legal Amazon region and in the Northeast of Brazil, showed that only 3.4% of respondents had access to prenatal classified as appropriate. In a research in Rio de Janeiro, Domingues et al.[32] found adequacy of prenatal care in only 38.5% of the investigated pregnant women. The difference between the two studies may be explained, partially, by differences related to sampling, to access to health services and to different criteria for classifying prenatal care as adequate or not. With regard to the degree of satisfaction with the assistance received during the prenatal, it is known that the individual expectation about the care influences its evaluation, which often does not reflect the quality of care. However, is considered an important indicator for social control[33]. The literature has shown that women's satisfaction with the quality of prenatal care is related to the number of doctor's visits during prenatal[34], as well as to the effective communication, attention given, confidence and respect of health professionals for them[35].

All respondents classified as receiving adequate prenatal care, breastfed in the first hour of life. Access to medical appointments during prenatal has been identified in the literature as a protective factor for breastfeeding within one hour of birth[13,36]. Data from Uganda PNDS, conducted in 2006, showed that women who sought prenatal care were more likely to breastfeed within the first hour (6 to 7%) when compared to those who did not seek prenatal care[37]. Cross-sectional study conducted in Rio de Janeiro indicated that get prenatal care was a protective factor for non-breastfeeding within one hour of birth (PR = 0.23) 19.

Several studies have demonstrated that health professionals, through their practices and actions, influence both the initiation and duration of breastfeeding[38,39]. The orientation on breastfeeding by health professionals soon after birth increased the chance of women to breastfeed in the first hour of life[17]. Boccolini et al.[20] found that mothers have limited or

no power to make decisions about breastfeeding their children in the first hour of life, and shall be subject to the practices and actions of the professionals involved in the delivery, as well as to the institutional procedures in place in maternity wards. Inadequate hospital procedures in healthy newborns, such as aspiration of air and gastric tract immediately after birth[5] and providing food before breastfeeding[9] have also been identified in the literature as factors that may interfere in the early breastfeeding, which reinforces the importance of the WHO's recommendation that mother and baby should not be separated in the delivery room, except if there is a medical reason to justify such action[1]. Therefore, the professional practice at delivery becomes crucial for breastfeeding within one hour of birth.

Cesarean section was also a factor associated to a lower prevalence of breastfeeding in the first hour. Boccolini et al.[20] observed this same trend in Rio de Janeiro. Cesarean section influences the postponement of the first breastfeeding[40,41] due to several factors, including those related to anesthesia and the surgical procedure itself[20]. The prevalence of cesarean delivery in this study was high (61.5%), and also higher than that observed in Brazil (55.4%)[41], which indicates the need to review the current professional practice that elects caesarean section as a routine procedure, since Brazil accounted for 15% of the unnecessary cesareans occurred globally in 2008[42].

The prevalence of breastfeeding within one hour of birth was higher among mother-child pairs who remained rooming-in (83.8%), maintaining the association (PR = 0.28) even after adjusting for all study variables. Rooming-in is a hospital environment that enables the mother and her baby to remain together during the whole postpartum hospital stay[43]. Several studies have demonstrated the importance of the rooming-in for breastfeeding, providing greater confidence to the mother in relation to the latch-on and proper positioning for breastfeeding, autonomy to understand and care for the child, in addition to providing increased interaction between mothers and health professionals, which can take advantage of this environment to address essential aspects to enhancing the effectiveness of breastfeeding[44,45]. Cochrane systematic review found that the prevalence of exclusive breastfeeding until the fourth day before hospital discharge was higher among women who remained rooming-in than among those who were separated from their child[46].

Although in this study the physical, verbal and neglect reported by women during childbirth have not been associated with breastfeeding within one hour of birth, these are important factors to be considered in other studies, since the practices of health professionals were associated with early breastfeeding initiation. It is necessary to provide care and a proper environment to women's health, which are more vulnerable physically and emotionally at birth, prioritizing the humanization of birth and maximizing the attention given to the woman, which often is focused only in the newborn and subordinate to the practices of health professionals[47,48]. Some authors have suggested that stressful experiences in childbirth can delay the initiation of breastfeeding[49], however, none of these studies investigated the possible association between violence in childbirth and breastfeeding within one hour of birth. The present study is pioneer in the investigation of this association. Therefore, it is necessary to conduct further research in order to elucidate this factor.

CONCLUSION

The conduction of researches during the vaccination campaigns has been a widely employed strategy in Brazil due to the following advantages: data is obtained quickly, survey is conducted with a relatively low cost, it allows the mobilization and involvement of local managers[11,24,27]. However, this type of research can only be performed if the National Immunization Program maintains the continuity of the "D-Day" in vaccination campaigns.

With regard to the limitations of this study, we can mention that the main investigation objective of the Federal District Call was not the factors associated with breastfeeding within one hour of birth, which limited the inclusion of other important information that could be associated with this outcome such as: if the mother received help while positioning the child for breastfeeding, if breastfeeding was initiated at the delivery room, if inadequate hospital procedures were performed in healthy newborns as aspiration in upper airways and pharynx, among other aspects, in addition to the inclusion of the population living in rural areas of the Federal District.

The health professionals' practices and services in all stages of the comprehensive health care of both mother and child are essential to breastfeeding within one hour of birth. It is necessary that appropriate assistance in prenatal is granted to women as well as in the delivery and postpartum, in order for them to be empowered and take an active role, being protagonists in the decisions related to own and their children's health during hospitalization for childbirth. The findings of this study can support improvements in the planning and management of health services in order to promote breastfeeding within the first hour of life.

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