





Prevalence on the complement in offering food to newborns


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Abstract

Objectives: to identify the prevalence and determining factors of the complements in offering food to newborns.

Methods: across-sectional study nested to a cohort study that assessed newborn care in four public maternity hospitals in Natal/Brazil. Sample was composed by 415 mothers and full-term newborns, with appropriate weight for gestational age and Apgar scores in 1st and 5th minutes ≥ 7 . In order to analyze the determining factors, we used Poisson's regression.

Results: from 415 newborns, 51.3% received feeding complements (57.6% in the first hour of life), of which 92% was infant formula. Only 50.7% of those complement in offering food were prescribed by physicians. Colostrum deficiency was the main reason to be indicated (33.8%). Maternal age ≤ 20 years old ($PR=0.64$; $CI95\%=0.47-0.86$) and between 20-30 years old ($PR=0.70$; $CI95\%=0.57-0.87$) comparing to women older than 30 were shown as protective factors, while being primiparous ($PR=1.37$; $CI95\%=1.11-1.60$) and had cesarean section ($PR=1.2$; $CI95\%=1.00-1.45$) as risk factors.

Conclusion: maternal characteristics are associated with the complement in offering food to the newborn in the first hours of life. The high prevalence shows the need for interventions that minimize the inadequate offer of infant formula and promote exclusive breastfeeding before hospital discharge.

Key words Infant nutrition, Infant formula, Breastfeeding, Weaning, Complementary feeding



Introduction

Exclusive Breastfeeding (EB) – which should be offered from birth to the first 6 months of life – is among the World Health Organization recommendations for reducing child mortality.¹⁻³ Studies show that the chances of remaining in breastfeeding (BF) in the first month and in the following months are greater when the newborn (NB) is placed in immediate contact with the mother, skin-to-skin, and even more when it is possible to accomplish the “Golden Hour”. This consists in placing the NB on the maternal breast in the first hour of life.⁴

In this context, the *Iniciativa Hospital Amigo da Criança* (IHAC) (Child-Friendly Initiative Hospital), which was established in Brazil in the 1980s, advocates a prevalence above 80% for breastfeeding in the first hour, and acts to protect and promote breastfeeding, such as the “Ten Steps for Successful Breastfeeding”. Among them are steps 4 –“To help mothers start breastfeeding in the first half hour after the baby’s birth” - and 6 –“To avoid giving the newborn any food or drink other than breast milk, unless this procedure has a medical indication”.⁴ Other highlights are the *Programa Nacional de Incentivo ao Aleitamento Materno* (National Program to Encourage Breastfeeding), the installation of Human Milk Banks (HMB), the *Estratégia Amamenta e Alimenta Brasil* (Brazilian Breastfeeding and Food Strategy) and the legislation on breast milk substitutions.^{5,6}

Despite the efforts to maintain EB, the offer of a complement, predominantly with infant formula, is a frequent practice and without justifying reasons for IHAC in the first hours of life of low-risk NB.^{7,8} The following conditions stand out as justifying reasons: Premature NB, with very low birth weight, who are at risk of hypoglycemia, situations that contraindicate breast milk, and in the mother’s adverse clinical conditions which prevent breastfeeding.⁴

The prevalence of supplement of offering is still high, reaching around 75% in some countries and from 16% to 63.5% in different Brazilian regions.⁹⁻¹⁷ Difficulties in gripping and sucking, NB has hypoglycemia, skin to skin contact after birth, breastfeeding in the first hour of life, type of delivery, maternal clinical and sociocultural characteristics, lack of guidance from the professionals and the lack of accreditation of the maternity hospital to the IHAC are among the factors that are commonly associated with early offering of the complement.^{10,11,13-17}

Another concerning factor has been the increased offer of milk formulas due to the shortage

of pasteurized breast milk in the HMB. This practice, in turn, has been related to the increased risk of intestinal dysbiosis, infections and allergy due to the cow’s milk protein in NBs.^{14,18} It is known that breast milk is rich in essential amino acids, growth factors, immunoglobulins, probiotics, among other essential substances for neonatal development.

Considering that indiscriminate the complement in offering food is among the causes that compromise breastfeeding substantially in the first hours and days after birth, this study aims to identify the prevalence of offering complementary food to NBs and the factors associated with this practice.

Methods

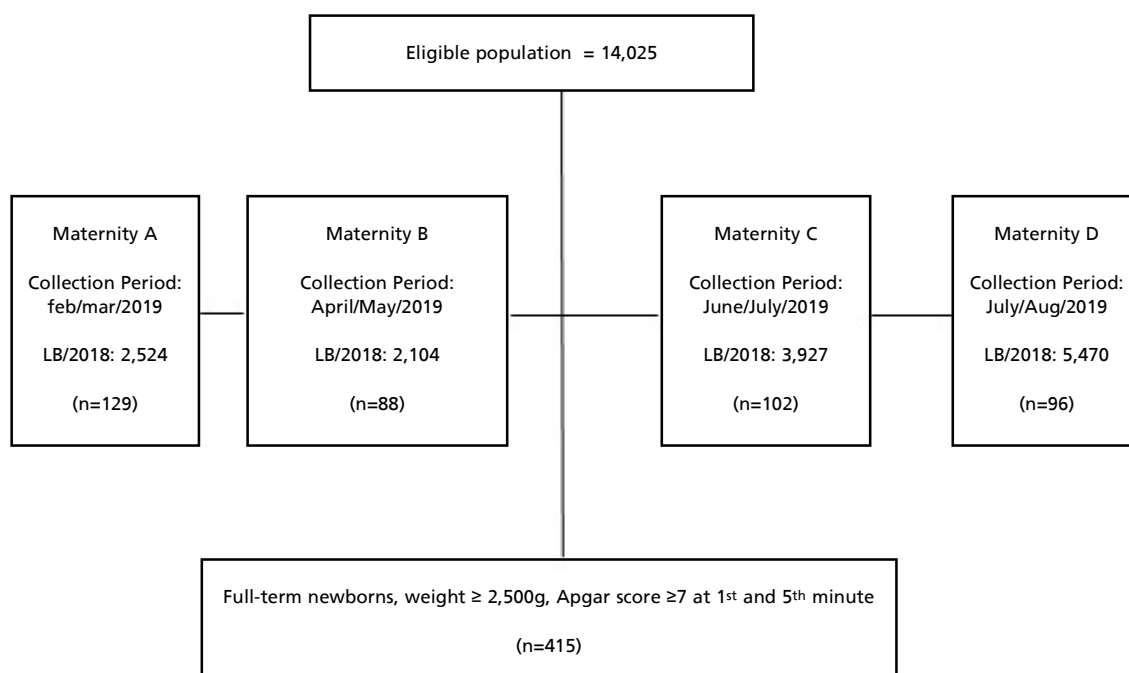
A cross-sectional study nested with a cohort study that assessed neonate care in four public maternity hospitals in the city of Natal, in the state of Rio Grande do Norte (Northeast Brazil), from February to August 2019. The aforementioned city represents a percentage of 42% of live births in the State with its greatest representation in maternity hospitals linked to the Public Health System (SUS).

The calculation of the representative sample in the main study considered a prevalence of 70% in the performance of care actions, a sampling error of 5% for a population of 14,025 live births in 2018, a 95%, of confidence interval and non-response rate of 24%, resulting in a sample size of 415 mother/child binomials. This total was stratified according to the percentage of live births in 2018 in the four selected public maternity hospitals (Figure 1).

Recruitment and data collection were performed daily (except for some days of the weekend), during daytime hours, for 1 to 2 months in each maternity hospital, totaling a period of 7 months from the beginning to the end of the collection, according to established criteria. Initially, medical records were consulted to identify infants who met the following eligibility criteria: live term newborns (≥ 37 weeks), with birth weight $\geq 2,500$ g, Apgar scores at the 1st and 5th minute ≥ 7 , and from a single pregnancy. After that, puerperal women were invited to participate in the study, and in case of acceptance, the Informed Consent Form (ICF) was applied. Mothers who were not in good health to answer the research instrument did not meet the inclusion criteria. The interview with the mother was carried out using a questionnaire tested in a pilot study and applied by a team of previously trained researchers. For this study, some variables (actions) were used and collected in the first follow-up interview, was conducted 48 hours after delivery. When the infor-

Figure 1

Sample flowchart.



LB= Live births. Data provided by the *Secretaria Estadual de Saúde* (State Health Secretary).

mation was not written in the medical record, it was asked directly from the mother.

The dependent analyzed variable was the complement in offering food during the NB's hospitalization until the moment of the interview. The complement is characterized by the offering of pasteurized maternal milk or infant formula in the absence of the first one, under different conditions. The prescriptions, indications, type, volume and time of the offer were also assessed.

The explanatory variables, characterized as possible determinants for the complement in offering food in a room setting were those related to the maternal individual characteristics (age, schooling, income, parity, clinical condition of clinical diabetes, type of delivery, intention in breastfeeding), the NB's characteristics and clinical condition (sex, weight at birth and glycemic values before the complement in offering food); the welfare variables (companion during the delivery process, skin-to-skin contact and breastfeeding in the first hour of life) and the institutional variables (administrative nature of the maternity, level of complexity, "Child-

Friendly" title given by the IHAC and number of professionals per bed).

The statistical analysis of the data was performed through the SPSS® Statistical Program, version 20.0. The association between independent and dependent variables was made by the means of Pearson's Chi-square test and the Linear Trend test to compare the groups that received or not the complement, in addition to the Student's T test for quantitative variables with normal distribution. The joint effect of variables associated with was evaluated by the Poisson Regression. Initially, the independent variables with p value ≤ 0.20 in Pearson's Chi square were eligible. In the next block, the inclusion of variables was by the main effects method, individually removing the variables with p value < 0.10 . In the final model, the explanatory variables with p value ≤ 0.05 and 95% confidence interval were considered, which met the established assumptions for fit (Goodness of fit), significance (Omnibus Test) and dispersion.

The ethical approval was granted by the Research Ethics Committee from the Hospital Universitário Onofre Lopes, under the opinion

number 3.133217, being in line with Resolution number 466/2012, which contemplates guidelines and regulatory norms for the research with human beings. If the participant was under 18 years old, the consent was obtained from parents or guardian on his/her behalf.

Results

A total of 415 mother-child pairs were recruited (Figure 1), with a 16.6% loss at the end of the 28-day follow-up of the cohort that originated this study. There were no mothers who refused to participate in the study. Thus, of the 415 mother-child binomials recruited, 213 (51.3%) NB received complementation. Table 1 shows the care, maternal, and neonatal characteristics. Mothers were predominantly 20 to 29 years old (46.5%), had attended high school (60%), were married or in a stable union, with a family income less than or equal to one minimum wage, and were multiparous. As for the NB, 52.5% were male and 90.4% were born weighing between 2,500 and 4,000 grams, whose mean weight was 3,324g, with a standard deviation of 478.6g.

The maternal characteristics initially revealed a significant association ($p \leq 0.05$) for offering maternal milk as a complement. Nevertheless, after multiple analysis, the complement in offering food remained significantly associated with variables related to age, parity and type of delivery. When analyzing each explanatory variable individually, the maternal age ≤ 20 years old showed a protective effect in 36% and age between 20 and 29 years old protective effect of 30%. When it was considered only the predictive factors, the prevalence increases 1.37 (CI=1.11-1.60) and 1.20 (CI=1.00-1.45) times, respectively for primiparity and cesarean delivery (Table 1).

Table 2 shows the distribution of the use of the complement based on the variables that characterize the institutions. Similar results are observed in both groups, with no statistically significant difference ($p > 0.05$) when evaluating the administrative nature, level of complexity, IHAC title and the ratio of number of professionals per bed.

Of the 213 (51.3%) NBs that received complement, 57.6% was in the first hour of life and, the mean of 5.6 ± 7.2 hours after birth. As for the type of complement offered, 92% had infant formula. Of the total of NBs that received the complement, only half had a medical prescription. The main reason described in the medical record or informed by the mother was the absence or deficiency of colostrum (33.8%), while 23.9% had no reason for the indica-

tion (Table 3).

Discussion

In this study, a high prevalence of complementary feeding was found, which corroborates the findings of studies conducted in Ireland, Canada, the United States, and even Brazil.^{2,14,15,19} Although, WHO recommends skin-to-skin contact at birth, breastfeeding in the first hour of life and "Do not give the newborn baby any food or drink other than breast milk, unless such procedure has a medical indication", most NBs received the complement in the first hours and days after birth. We even found that this offer occurred without any justifiable indication on the part of IHAC and often without a medical prescription.

The actions instituted by the United Nations Children's Fund and WHO, through IHAC, have contributed to the success of breastfeeding and to the reduction of the complement of offering food.^{4,20} which differs from the results introduced in this research. Among the participating institutions, only one did not have the title named "Child-Friendly Hospital". Nevertheless, maintaining this title did not favor the achievement of differentiated outcomes. Even with the advances and achievements obtained by accredited institutions in Brazil, practical and operational difficulties are observed in enforcing the "Ten Steps", especially step 6.²⁰

The administrative nature, the level of complexity and the ratio of the number of professionals per bed did not influence the complement in offering food. These findings differ from those obtained by studies in the United Kingdom, whose lack of personnel, perception of the importance of support and professionals' qualification were associated with the complement in offering infant formulas.¹²

The maternal age under 29 years behaved as a protective factor to the complement in offering food to NBs, opposing the Australian study developed by Bentley *et al.*,¹⁷ which identified younger mothers as more likely to give infant formula to their NBs. Such protection can be justified by a probable reverse causality, so that, possibly, the most vulnerable women may have received priority care from the healthcare team, which is a conduct recommended by WHO.

Conversely, the prevalence of this offer was increased by 1.37 times for NBs of primiparous mothers, being consistent with the pertinent literature.^{10,17} This vulnerability can be justified by the absence of previous breastfeeding,^{16,21} inadequate

milk perception, pain, breast milk problems²² and cesarean section. The latter was associated to a 20% increase in the prevalence of complement, corroborating the findings in the pertinent literature.¹⁷ Knowing that 46% of the children in this study were born from cesarean section –higher than the recommendation by WHO (10%) in reducing maternal and neonatal mortality –such association is a concern. Brazil has implemented public policies that, in addition to contributing in the reduction of unnecessary interventions to the mother-child binomial, also aiming to improve breastfeeding indicators from their promotion. Among them, we can highlight the *Rede Cegonha* (Stork Network), the Apice-On qualification and the IHAC.^{1,23}

In this study, the main reason for supplementation was the absence of colostrum. However, this

does not fit as an acceptable medical reason. Conversely, only 42.3% showed clinical conditions justifiable through IHAC (deficiency of grabbing and suction, large NB for gestational age, among other reasons related to the clinical conditions of the NBs and mothers).⁴ This finding was higher than the one found in Biggs *et al.*¹² study in the UK, which found a prevalence of 10%; and Pinheiro *et al.*⁸ developed in another maternity hospital in the state of Rio Grande do Norte/Brazil, found only 6.2% of the prevalence for reasons justifiable by IHAC.

It is also noteworthy the absence of record about the reasons for such prescription in the medical records and the absence of the medical prescription itself in almost half of the sample. This is a common practice already reported in the pertinent literature.^{8,10} Whether it is by verbal guidance from the

Table 1

Maternal, newborns, and healthcare teams' characteristics associated with the complementary of offering food. Natal/Brazil, 2019.

Variables	Total (N=415)		Complement in offering food (N=213)						
			Not adjusted			Adjusted			
			n	%	p*	PR	CI95%	PR	CI95%
Maternal characteristics									
Maternal age (years)									
≤ 20	79	37	46.8	0.019	0.77	0.59-1.01	0.64	0.47-0.86	0.003
20 - 29	193	89	46.1		0.76	0.62-0.92	0.70	0.57-0.87	0.001
>30	143	87	60.8		1	-	1	-	-
Schooling									
High school to higher Education	271	146	53.9	0.154	0.86	0.70-1.06	-	-	-
Elementary School	144	67	46.5		1	-	-	-	-
Marital status									
Married or stable union	328	164	50.0	0.294	1.06	0.95-1.99	-	-	-
Single/divorced/widowed	87	49	56.3		1	-	-	-	-
Income									
>1	147	80	54.4	0.350	0.95	0.86-1.05	-	-	-
≤ 1	268	133	49.6		1	-	-	-	-
Gestational diabetes									
Yes	50	31	49.9	0.107	1.24	0.98-1.58	-	-	-
No	365	182	62.0		1	-	-	-	-
Parity									
Multiparous	261	126	48.3	0.106	1	-	1	-	-
Primiparous	154	87	56.5		1.17	0.97-1.41	1.37	1.11-1.60	0.004
Type of delivery									
Vaginal	224	103	48.4	0.018	1	-	1	-	-
Cesarean section	191	110	51.6		1.25	1.04-1.51	1.20	1.00-1.45	0.050

continue

^a Minimum wage (2018)= R\$998.00; ^bVariable collected in 3 maternity hospitals; ^cSample with 407 weight records; ^dVariable collected in 3 maternity hospitals(n= 296/415 (23.4%), and not included in the Regression model; Variables included in the adjusted model: variables with p value <0.20.

NB= newborn; BF= breastfeeding; PN= Prenatal care; BM= breast milk; g= grams. Mg/dL= milligrams/deciliters. PR= prevalence ratio; CI= confidence interval; p ≤ 0.05; p* Pearson's Chi-square; p** Poisson Regression.

Table 1 **concluded**
 Maternal, newborns, and healthcare teams' characteristics associated with the complementary of offering food. Natal/Brazil, 2019.

Variables	Total (N=415)		Complement in offering food (N=213)						
			Not adjusted			Adjusted			
			n	%	p^*	PR	CI95%	PR	CI95%
Intention to breastfeed ^b			0.945						
Up to 6 months	83	43	50.0	0.99	0.86-1.13	-	-	-	-
7 to 12 months	70	35	50.0	0.99	0.85-1.14	-	-	-	-
For more than 12 months	123	64	52.0	1	-	-	-	-	-
Characteristics of NB			0.182						
Child's sex									
Male	218	117	53.7	1.05	0.95-1.16	-	-	-	-
Female	197	96	48.7	-	-	-	-	-	-
Birth weight (g) ^c				0.098					
2,500-4,000	375	189	50.4	1	-	-	-	-	-
>4,000	32	21	65.6	1.32	0.99-1.71	-	-	-	-
Pre-supplemental glycemia ^d				0.005					
< 40 mg/dL	29	28	96.6	1.36	1.14-1.63	-	-	-	-
40-50 mg/dL	36	31	86.1	1.23	1.00-1.50	-	-	-	-
> 50 mg/dL	32	21	65.6	1	-	-	-	-	-
Health care characteristics									
Companion during delivery				0.087					
Yes	307	151	49.2	1	-	-	-	-	-
No	108	62	57.4	1.17	0.96-1.42	-	-	-	-
Skin-to-skin contact				0.651					
Yes	246	124	50.4	1	-	-	-	-	-
No	169	89	52.7	1.02	0.93-1.13	-	-	-	-
Breastfeeding in the first hour of life				0.036					
Yes	242	114	47.1	1	-	-	-	-	-
No	172	99	57.6	1.22	1.01-1.47	-	-	-	-

^a Minimum wage (2018)= R\$998.00;^bVariable collected in 3 maternity hospitals; ^cSample with 407 weight records; ^dVariable collected in 3 maternity hospitals(n= 296/415 (23.4%)), and not included in the Regression model; Variables included in the adjusted model: variables with p value <0.20.

NB= newborn; BF= breastfeeding; PN= Prenatal care; BM= breast milk; g= grams. Mg/dL= milligrams/deciliters. PR= prevalence ratio; CI= confidence interval; $p \leq 0.05$; p^* Pearson's Chi-square; p^{**} Poisson Regression.

physician, pressure from the family, or by their own decision, it is possible that the nursing team requests the supplement at the lactation department, as found in Pinheiro *et al.*⁸ study This is a situation that can result from work overload, the reduced number of professionals per bed, the lack of training of the team and the level of complexity in care. However, these factors were not determinant in this study.

Although, the indication criteria are strictly defined in order to keep NBs on EB, the occurrence of hypoglycemic episodes is a constant concern for the healthcare team. The mother's desire to offer the complement on these occasions has increased the

chances of the team to apply such conduct.²⁴ In order to make the mother able to experience this process without the NB using a complement, the support of the ideally trained multi-professional team is essential, which must be engaged and follow the guidelines of the "Ten Steps for Successful Breastfeeding" both in the delivery room and in the rooming. Breastfeeding in the first hour of life, as well as the guidelines on breastfeeding techniques and the characteristics and benefits of breastfeeding, enable maternal empowerment and are fundamental in reassuring the mother. Thus, it is possible to achieve emotional balance, lactogenesis is favored, the

Table 2

Bivariate analysis of institutional characteristics and the complementary in offering food to newborn. Natal/Brazil, 2019.

Variables	Total (N=415)	Complement in offering food (N=213)				p
		Yes		No		
		n	%	n	%	
Administrative nature of the maternity ward						0.346 ^a
City	190	91	47.9	99	52.1	
State	96	54	56.2	42	43.8	
Federal	129	68	52.7	61	47.3	
Level of complexity						0.199 ^b
Low risk	190	91	47.9	99	52.1	
High risk	225	122	54.2	103	45.8	
IHAC Title						0.936 ^b
Yes	313	161	51.4	152	48.6	
No	102	52	51.0	50	49.0	
Ratio number of professionals per bed ($\bar{X} \pm SD$)			1.25 \pm 0.04			0.971 ^c
Ratio number of pediatricians per bed ($\bar{X} \pm SD$)			0.13 \pm 0.02			0.875 ^c

IHAC = Child-Friendly Initiative Hospital; SD= standard deviation; ^a Linear Trend; ^b Pearson's Chi-square; ^c Student's T-test.**Table 3**

Reasons to indicate and characterize the complement in offering food to NBs. Natal/Brazil, 2019. (n=213).

Variables	N	%	CI95%
Reason to offer complements to NB			
Colostrum deficiency	72	33.8	27.5-40.2
Difficulty in grabbing /sucking	50	23.5	17.8-29.2
LGA	7	3.3	0.9-5.7
Other problems related to the NB	18	8.5	4.7-12.2
Other maternal problems	15	7.0	3.6-10.5
Without prescribed reasons	51	23.9	18.2-29.7
Medical prescription of the complement			
Yes	108	50.7	44.0-57.4
No	105	49.3	42.6-56.0
Time of the complement offered to NB (n=148) ^a			
Morning (6:00 a.m. to 6:00 p.m.)	76	35.7	29.0-42.0
Night (6:00 p.m. to 6:00 a.m.)	72	37.8	27.0-40.0
Type of complement			
Pasteurized breast milk	17	8.0	43.3-59.4
Infant formula	196	92.0	40.6-56.7
Complement volume offered			
\leq 10 mL	174	81.7	76.5-86.9
$>$ 10 mL	39	18.3	13.1-23.5
Beginning of the supplement offer after the birth of the NB (hours) \bar{X} (SD)			5.61 (7.2)

^aRegistration of Time was only of 148 newborns who received complements; NB= newborn; SD= standard deviation; LGA= large for gestational age.

baby's sucking is successful, and the feeding becomes mutually beneficial for the child and the nursing mother, strengthening the mother-child bond.

The absence of colostrum or hypogalactia, reported in the literature as the main reason for early weaning, consists of reduced milk secretion. It is caused by hormonal changes in the oxytocin and prolactin – a condition often associated with biological, psychosocial, and behavioral factors, such as: the first birth, surgical procedure, pain, discomfort, anxiety, stress, and prematurity.^{25,26} These situations can delay hormone release and the first lactation (which usually occurs within 72 hours after birth) and, consequently, favor the maternal desire for supplementation.⁸ Delayed lactogenesis can also be due to inadequate grabbing, lack of sucking, and even offering infant formula in the first hours of life.^{27,28} However, a careful evaluation is necessary when considering the type of delivery and parity, because in Isik and collaborators' study,²⁶ there was no statistically significant correlation between prolactin production and these factors.

Although, the absence of colostrum is not justifiable for the complement in offering food, studies show that if this condition is prolonged, the risk of hypoglycemia is imminent, especially in premature NBs and LGA.^{14,17} As much as this is one of the justifiable reasons, there is still no consensus in the literature about the offering of formulas in reducing cases of hypoglycemia in NBs, nor the definition of glycemic values that characterize it and therefore, support the indication of complement, leaving this definition to the discretion of clinical evaluation, according to the individuality of each child.²⁹ In this study, only one third of the NBs who received the complement had glycemic record. Another limitation of the glycemic values in this study was due to the collection being done in only 3 maternity hospitals, and for this reason, we chose not to include it in the final regression model.

In healthy conditions, parturient women have biological conditions that are sufficiently favorable for breast milk production in the first hours after birth. However, mother's and the healthcare team's perception of "insufficient milk" is still frequent. This leads to the lack of adequate waiting and/or stimulation for colostrum dripping – including the absence of skin-to-skin contact and breastfeeding the NB in the first hour of life. In this study, the complement was offered, on average, 5.6 hours after birth, being this time lower than that reported in the pertinent literature (8.7 hours), which points out as harmful factors for EB: a longer period of profes-

sional activity and maternal fatigue in the daytime.^{8,19,21}

Another much discussed point is the type of complement offered. Despite the unanimity in offering breast milk the maternity that has a milk bank – two of the institutions participating in this study – did not have sufficient stock for the full-term NB, thus prioritizing, for them, the offer of starting infant formulas.

Policies to combat the advertising and discounting infant formulas in the hospitals, as well as the harassment of these companies with medical and nutritional professionals to prescribe and purchase, may be means of manipulations to favor improper prescriptions and to decrease the offering in supplying the supplements in these settings. In Brazil, this policy was instituted by the *Norma Brasileira de Comercialização de Alimentos para Lactentes e Crianças de Primeira Infância, Bicos, Chupetas e Mamadeiras* (NBCAL – Lei 11.265 de 2006)⁵ (Brazilian Standard for Commercialization of Food for Infants, Young Children, Nipples, Pacifiers and Bottles, but the effect on the use of formulas to replace breast milk in hospitals is still unknown. In this sense, strategies such as the breast milk donation campaign are fundamental to increase the stocks in HMBs and thus favor the promotion of breastfeeding. For example, there is a hospital in Hong Kong, where it was possible to reduce 57% of the supply of formula supplementation, increased 23.6% the EB during hospitalization, and increased the breastfeeding time from 8 to 12 weeks after adopting policies that do not accept free infant formula.³⁰

Among the limitations, it is noteworthy that the original study was not designed to exclusively evaluate the complement in offering food, which justifies the absence or incompleteness of some variables collected. For example, the sample did not include all the explanatory variables for the complement in offering food – such as the time of offering and the recording of capillary blood glucose a more in-depth analysis of the reasons for the complement in offering food at the "Child-Friendly Hospitals", the difficulties to maintain the "Ten Steps", and the evaluation of the accreditation process.

Although this study was conducted in only one city, the results of this research are consistent with the literature. At the same time, such findings are strengthened by the previous realization of a pilot study for better applicability of the research instrument and by the collection of information having been performed when NBs were exposed to the use of the complement. Thus, memory biases were minimized and allowed the confirmation and validation

of the information recorded in the medical records.

The results confirmed that maternal and care are determinants characteristics for the offer of complementary food to infants, as well as the need to protect mothers of greater vulnerability. Given the findings, this study favors the increase of knowledge about the predictors of the complement in offering food, reinforcing the need for explanations of the prescriptions, as well as the non-prescriptions (especially in maternity hospitals accredited to IHAC), to investigate whether the use of the complement in offering food contributes to early weaning in these children and the maternal desire to exclusively breastfeed.

Considering the unacceptability to offer complementary food without acceptable justifications in a "Child -Friendly Hospitals", the findings of this research strengthen the role and awareness of the team, as well as the planning and implementation of educational actions necessary to empower mothers about the mutual benefit of breast milk for the binomial. Such understanding is essential for the development of interventions that minimize the inadequate supply of the complement in offering food and promote EB. In this sense, the *Política Nacional de Atenção à Saúde da Criança* - PNAISC (National Policy for Comprehensive Child Health Care) through *Rede Cegonha* (Stork Network) and IHAC must be firm in its principles: training the healthcare team, improving assistance in childbirth, birth and

postpartum, supporting the accreditation of the IHAC and discourage the purchase of over-the-counter use of infant formula.

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Authors' contribution

Pinheiro JMF, MenêzesFlor TB, Braga da Mata AM, Andrade FB: made substantial contributions to the conception, design, analysis and interpretation of the data as well as the writing of the article. Pires VCC, Oliveira LIC, Barbosa WPM made substantial contributions to data acquisition and writing of the article. All authors approved the final version of the manuscript.

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