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Factors associated with early initiation of breastfeeding

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ABSTRACT

Introduction: Early initiation of breastfeeding (EIBF) is still little stimulated in several hospitals in Brazil. **Objective:** To estimate the prevalence and factors associated with Early initiation of breastfeeding (EIBF). **Methods:** Cross-sectional, quantitative study with retrospective secondary data collection in hospital records of 250 full-term newborns, regardless of the type of delivery, with no history of maternal gestational risk, seen in the last six months. Data collection period in a public maternity hospital in Greater São Paulo. Data collection was performed between November 2018 and January 2019, with approval from the hospital and the FMABC Research Ethics Committee under register n. 2,924,393. **Results:** The prevalence of EIBF was 66%. BFH is associated with anesthesia at childbirth (p<0,001), APGAR less than or equal to 8 in the 1st and 5th minutes (p<0,001), and with c-section (p<0,001), which represented 29.2% of deliveries in the sample. Respiratory distress (38.82%), hypotonia (24.70%), followed by unfavorable maternal conditions (18.82%), were shown to be impeding factors for EIBF, although 90% of newborns received Apgar 9 /10 in the 5th minute. **Conclusion:** The prevalence of early breastfeeding is lower than recommended, but compatible with the most recent national frequency proportions.

Keywords: breastfeeding; infant, newborn; term birth; Maternal-Child Health Services; nursing care.

INTRODUCTION

Early initiation of breastfeeding (EIBF) is an important indicator of perinatal health, with significant impacts on neonatal morbidity and mortality in children under five years of age[1,2].

Breastfeeding is the safest way to nourish children at the beginning of their lives. Its nutritional and immunological composition gives newborns the ability to defend themselves against infections, as well as promote growth and physiological, cognitive, and emotional development[1-3].

Os benefícios do aleitamento materno se estendem ainda para a saúde física e psíquica da mãe, bem como o desenvolvimento do afeto emocional entre mãe e filho.

Early initiation of breastfeeding is a practice recommended by the World Health Organization since 1990 and corresponds to the fourth step in the Baby-Friendly Hospital Initiative (Iniciativa Hospital Amigo da Criança - IHAC)[4,5].

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Since the launch of the IHAC, Brazil has stood out internationally in terms of improving breastfeeding indicators, due to the programs and actions implemented. However, according to the latest report from the National Infant Feeding and Nutrition Study6, the median of exclusive breastfeeding is 3 months and therefore below six months, according to the recommendations of the World Health Organization and the Ministry of Health[1,5,6].

The earlier the newborn starts breastfeeding, the greater the chances of success in prolonged breastfeeding. According to a study by Victora et al.[1], only 50% of newborns start breastfeeding early, i.e., within the first hour of life. The national prevalence of EIBF among children under 2 years of age is 62.4%, according to ENANI 2019[6].

It is recommended that the child is placed in skin-to-skin contact (SSC) immediately after birth. This is an evidence-based practice that contributes to EIBF and is indirectly related to the success of exclusive breastfeeding[4,7].

According to Santos et al.[8], in addition to SSC encouraging breastfeeding provides thermal stability for the newborn, helps to expel the placenta, and encourages the bond between mother and child. Sucking on the nipple stimulates the pituitary gland to produce prolactin and oxytocin, leading to milk production and subsequent uterine contraction, aiding uterine involution, and thus reducing the risk of postpartum hemorrhage[9].

Therefore, SSC and EIBF contribute to reducing early weaning and infant morbidity and mortality, as well as being a factor in promoting children's health in general, and should be a priority on the agenda of maternal and child health services[2,4,7,10].

Against this backdrop, this study aims to estimate the prevalence and factors associated with EIBF among full-term newborns.

METHODS

This is a cross-sectional, quantitative study that collected retrospective secondary data from the hospital records of 250 full-term newborns, regardless of the type of delivery, with no history of maternal gestational risk, seen in the last six months before the data collection period, in a public maternity hospital in the metropolitan area of São Paulo, Brazil.

Data was collected between November 2018 and January 2019 using a structured instrument. The data was extracted from the medical records and hospital care forms standardized by the study site for assessing breastfeeding, in addition to including other study variables relating to maternal sociodemographic data, maternal reproductive history, delivery conditions, and newborn characteristics.

The inclusion criteria included full-term newborns, i.e., those with a gestational age of 37 weeks or more, regardless of the type of delivery, with no history of maternal gestational risk, who had been treated in the last six months before the data collection period at the hospital selected for the study.

The exclusion criteria were newborns classified as preterm, regardless of the type of delivery, newborns delivered by cesarean section, newborns whose mothers were at risk during pregnancy or delivery, and newborns treated within six months of the study's data collection.

The database and statistical treatment were conducted using the Epi Info™ program. The analysis used proportions and the chi-square test, adopting a 5% significance level and a 95% confidence interval.

This study was approved by the Research Ethics Committee of FMABC under approval number 2,924,393.

RESULTS

Based on the sample of 250 full-term newborns (NB) analyzed using secondary data, among the maternal sociodemographic characteristics, we found a mean maternal age of 26.3 years (SD=6.42; Min=14/ Max=42; 95%CI=25.51-27.12), with almost 60% of the sample represented by non-white mothers, with nine years or more of schooling, with some type of occupation in 55.72% (n=201) of the cases, with the majority of the unemployed being housewives (33.83%), students (7.46%) and unemployed (2.99%) (Table 1).

Table 1: Distribution of breastfeeding frequencies in the first hour of life according to maternal sociodemographic variables and p-value of the chi-square test (n=250).

Variable	Breastfeeding 1st hour of life				Total	p*
	Yes		No			
	n	%	n	%		
Age group (years)						0.588
10 – 19	25	75.76	8	24.24	33	
20 – 29	88	63.77	50	36.23	138	
30 – 39	44	62.86	26	37.14	70	
40 – 49	6	66.67	3	33.33	9	
Years of Study (n=246)						0.821
Under 9 years	68	66.67	34	33.33	102	
Over 9 years	94	65.28	50	34.72	144	
Skin color (n=242)						0.780
White	66	64.71	36	35.29	102	
Not White	93	66.43	47	33.57	140	
Occupation (n=201)						0.216
Yes	78	69.64	34	30.35	112	
No	54	60.67	35	39.32	89	
Parity (n=249)						0.869
Primiparous	71	66.36	36	33.64	107	
Secundiparous	49	62.82	29	37.18	78	
Tertiary	25	62.50	15	37.50	25	
Multiparous	17	70.83	7	29.17	17	
Pregnancies (n=249)						0.685
Primigest	60	68.18	28	31.82	88	
Secundigest	46	60.53	30	39.47	76	
Tercygest	33	68.75	15	31.25	48	
Multigest	23	62.16	14	37.84	37	

From a reproductive point of view, 64.65% (n=249) of the mothers of the newborns reported more than one previous pregnancy, with a proportion of 42.97% of primiparous women in the sample and 21.60% of previous miscarriages (Table 1).

The analysis of delivery and birth conditions identified a prevalence of 66.80% (n=167) of early breastfeeding in the sample, with skin-to-skin contact having been made in the first hour of life in 165 newborns (66.0%), with a statistically significant association about the breastfeeding variable (p<0,001), as shown in Table 2.

Table 2: Frequency distribution of breastfeeding in the first hour of life at the levels of delivery and birth variables and p-value of the chi-square test (n=250).

Variable	Breastfeeding 1st hour of life					p*
	Yes		No		Total	
	n	%	n	%		
Induction of labor						0.388
No	133	66.50	67	33.50	200	
Yes	30	60.00	20	40.00	50	
Type of birth						<0.001
Normal	128	75.29	42	24.71	170	
Cesarean section	29	39.73	44	60.27	73	
Forceps	6	86.71	1	14.29	7	
Type of anesthesia						<0.001
None	33	75.00	11	25.00	44	
Local	87	78.38	24	21.62	111	
Raquidian	32	39.02	50	60.98	82	
Epidural	8	80.00	2	20.00	10	
Other	3	100.00	0	0.00	3	
Anesthesia						<0.001
No (or local)	120	77.42	35	22.58	155	
Yes	43	45.26	52	54.74	95	
Birth weight (g)						0.178
2000|---| 2499	6	60.00	4	40.00	10	
2500|---| 2999	36	70.59	15	29.41	51	
3000|---| 3999	119	65.38	63	34.62	182	
4000 ou mais	2	28.57	5	71.43	7	
Classification Weight X GI						0.932
AIG	150	65.50	79	34.50	229	
SGA	6	60.00	4	40.00	10	
LGA	7	63.64	4	36.36	11	
Apgar at 1st min.						<0.001
8 or less	59	46.46	68	53.54	127	
9 or 10	104	84.55	19	15.45	123	
Apgar at 5th min						<0.001
8 or less	6	24.00	19	76.00	25	
9 or 10	157	69.78	68	30.22	225	
Skin-to-skin contact 1st hour						<0.001
No	3	3.53	82	96.47	85	
Yes	160	96.97	5	3.03	165	
Reasons for not EIBF (n=85)						0.024
Respiratory discomfort	0	0.00	33	100.00	33	
Hypotonia	3	14.29	18	85.71	21	
Maternal conditions	0	0.00	16	100.00	16	
Other	0	0.00	15	100.00	15	

It is worth noting that the proportion of cesarean deliveries in the sample was 29.20% (n=250). However, 60.27% of newborns born by cesarean section did not receive early breastfeeding and 64.65% were not kept in skin-to-skin contact in the first hour of life, indicating that the type of delivery was associated with breastfeeding promotion practices at a significant level of p<0,001 (Table 2).

On the other hand, Table 2 shows that 77.42% of NBs whose mothers did not receive anesthesia or received local anesthesia (n=155) underwent EIBF, while this proportion was only 45.26% (n=95) among NBs delivered under spinal, epidural, or double block anesthesia (p<0,001).

Another variable associated with EIBF was the APGAR score. Scores above 9 were statistically significant with p-values < 0.001 (Table 2). Although 80.31% (n=102) of the newborns who received an APGAR score of 8 or less in the first minute achieved a score of 9 or more in the fifth minute, reaching a proportion of 90% of newborns with favorable APGAR after the fifth minute, only 69.78% of them received EIBF.

The reasons significantly associated with EIBF contraindication (p=0.024) were respiratory discomfort (38.82%), hypotonia (24.70%), followed by unfavorable maternal conditions (18.82%) and other causes such as hypersecretion, low room temperature, and twinning (17.64%).

Finally, Table 2 shows that the variables induction of labor observed in 20% (n=50) of cases and adequate birth weight for gestational age (91.6%; n=229) were not associated with BEM (p=0.388 and p=0.932, respectively).

DISCUSSION

The WHO classifies the percentage of adherence to breastfeeding in the first hour for mothers and healthy newborns as "very poor" when it varies between 0 and 29%, "poor" when it is between 30 and 49%, "good" between 50 and 89% and "very good" between 90 and 100%[11]. Despite the good percentage of adherence to breastfeeding in the first hour of life observed in this study, it was found that this result could be higher, given that most neonates were classified with a favorable Apgar score in the first minute and the fifth minute of life.

The most frequent reasons for not performing SSC and breastfeeding in the first hour of life were, in descending order, respiratory discomfort, and hypotonia, followed by unfavorable maternal conditions, including post-cesarean surgical and anesthetic recovery.

However, after the fifth minute of life, all these newborns were able to recover, considering the appropriate Apgar score parameters identified in the medical records. These results suggest that hospital routines need to be adapted, especially by the nursing team, to increase the practice of SSC immediately after birth and breastfeeding in the first hour of life.

According to Sampaio et al.[12], even with the growing number of hospitals adhering to the Baby-Friendly Hospital Initiative, as well as public policies to promote breastfeeding in general, there is still a high discrepancy between the Baby-Friendly Hospital Initiative recommendations and current practices to encourage breastfeeding in the first hour of life in maternity hospitals in Brazil.

Skin-to-skin contact (SSC) was not effective in half of the cases that underwent cesarean delivery (p=0.001). Therefore, there was a statistically significant association between cesarean delivery and SSC during the first hour of life. This is an essential factor in promoting and encouraging breastfeeding[13].

On the other hand, SSC shortly after birth is associated with the success of exclusive breastfeeding and therefore contributes to reducing early weaning and infant morbidity and mortality, as well as being a factor in promoting children's health in general[14].

In this sense, it is worth highlighting that the nursing team plays an essential role in this period, encouraging mothers to recognize the signs that their children are ready to start the first feed and helping them with positioning and comfort for breastfeeding, especially women who have more difficulties[15].

In this way, unfavorable maternal conditions related to cesarean delivery represented another crucial factor for EIBF. It has been observed in every day delivery rooms, and studies have validated, that cesarean sections negatively affect the start of breastfeeding and are associated with early weaning[16,17].

A study conducted in a private Brazilian hospital between 2016 and 2019 found that breastfeeding was more common among women who had vaginal deliveries than among those who had cesarean sections (92.57% vs 88.43%; p<0.001). In addition, the results of this study indicate a lower prevalence of breastfeeding in the first hour of life, when compared to the results of the study, whose EIBF rates were 95.71% and 95.20% in cesarean deliveries and 96.29% and 97.32% in vaginal deliveries, respectively in 2018 and 2019[18].

It is worth noting that the number of cesarean sections identified in this study, although higher than the parameters recommended by the WHO, is lower than the results observed in most Brazilian maternity hospitals. The "Nascer no Brasil" survey - the largest national survey on labor and birth ever conducted in the country - found that cesarean sections are performed in 52% of births in the Unified Health System and the private sector. In the latter, the proportion was 88%[19].

The World Health Organization (WHO) admits that cesarean section is an effective intervention to save the lives of mothers and newborns, but only when indicated for obstetric reasons[20,21]. And "at the population level, cesarean section rates greater than 10% are not associated with a reduction in maternal and neonatal mortality" according to the WHO[21].

Although full-term newborns were selected, the eligibility criteria for this study did not include maternal conditions about gestational risk factors, which may constitute an information bias in this research, as well as the analysis of secondary data available in the newborns' hospital records.

Embora tenham sido selecionados recém-nascidos a termo, os critérios de elegibilidade deste estudo não incluíram condições maternas em relação a fatores de risco gestacional, o que pode constituir um possível viés de informação nesta pesquisa, bem como a análise de dados secundários disponíveis nos registros hospitalares dos recém-nascidos.

It should also be noted that the variables age, schooling, skin color, parity, number of pregnancies, history of miscarriage, and induction of labor did not show statistically significant associations in the analysis that would allow inferences to be made about protective or risk factors for breastfeeding in the first hour of life.

Similarly, the study by Uchoa et a1.[22], based on the secondary analysis of 219 medical records of newborns admitted to the rooming-in unit of a reference maternity hospital in northeastern Brazil, did not identify statistical significance between the non-performance of SSC and maternal sociodemographic and reproductive variables.

On the other hand, this study found that SSC was negatively influenced by the variables NB weight <2,500 g (OR=3.2; CI: 1.04-10.11; p=0.034), preterm gestational age (OR=7.2; CI: 2.72-18.98, p<0.001), Apgar score at the 1st minute between three and six (OR=2.9; CI: 2.38-3.06; p<0.001), and cesarean delivery (OR=8.4; CI: 4.29-16.57; p<0.001)[22].

Birth weight is one of the main parameters that assess a newborn's health conditions[23]. In the current study, the entire sample of newborns had a birth weight above 2,500g, which is another factor that suggests the need to reorganize care routines at the study site.

Although SSC and EIBF showed a statistically significant association between cesarean delivery and spinal anesthesia, it is not possible to say that the type of delivery and anesthesia had a negative influence on both practices, due to the need for more robust specific statistical tests, a fact that may represent a limitation of the study.

It should be added that the results of this study refer only to the population analyzed in the selected hospital, and do not allow for generalizations.

Despite the limitations listed, this research reinforces the importance of an adequate and precise indication for cesarean section, and the encouragement of vaginal delivery by institutions, since the number of cesarean sections can be further reduced, as recommended by the World Health Organization, as a factor in reducing maternal and neonatal mortality[21].

It should also be noted that the vitality of the newborn did not represent formal impediments to not performing the SSC and EIBF, according to the Apgar scores observed.

In conclusion, the prevalence of EIBF was in line with WHO recommendations and compatible with the most recent national

prevalence data. However, the factors associated with EIBF suggest the need to review delivery room routines, as well as ongoing health education measures and improving perinatal education actions to reduce cesarean sections and increase practices to promote breastfeeding in the first hour of life.

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REFERENCES

1. Victora CG, Bahl R, Barros AJ, França GV, Horton S, Krasevec J, et al. Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect. Lancet. 2016;387(10017):475-90. https://doi.org/10.1016/S0140-6736(15)01024-7

2. Raihana S, Dibley MJ, Rahman MM, Tahsina T, Siddique MAB, Rahman QS, et al. Early initiation of breastfeeding and severe illness in the early newborn period: an observational study in rural Bangladesh. PLoS Med. 2019;16(8):e1002904. https://doi.org/10.1371/journal.pmed.1002904

3. Boccolini CS, Carvalho ML, Oliveira MIC, Pérez-Escamilla R. Breastfeeding during the first hour of life and neonatal mortality. J Pediatr (Rio J). 2013;89(2):131-6. https://doi.org/10.1016/j.jped.2013.03.005

4. Fundo das Nações Unidas para a Infância (UNICEF). Iniciativa Hospital Amigo da Criança: revista, atualizada e ampliada para o cuidado integrado: módulo 1: histórico e implementação. Brasília: Ministério da Saúde, 2008.

5. Brasil. Ministério da Saúde. Gabinete do Ministro. Portaria Nº 1.153, de 22 de maio de 2014. Redefine os critérios de habilitação da Iniciativa Hospital Amigo da Criança (IHAC), como estratégia de promoção, proteção e apoio ao aleitamento materno e à saúde integral da criança e da mulher, no âmbito do Sistema Único de Saúde (SUS). Available from: https://bvsms.saude.gov.br/bvs/saudelegis/gm/2014/prt1153_22_05_2014.html

6. Universidade Federal do Rio de Janeiro (UFRJ). Aleitamento materno: prevalência e práticas de aleitamento materno em crianças brasileiras menores de 2 anos 4: ENANI 2019. Rio de Janeiro: UFRJ, 2021.

7. Silveira RB, Albernaz E, Zuchetto LM. Fatores associados ao início da amamentação em uma cidade do sul do Brasil. Rev Bras Saude Mater Infant. 2008;8(1):35-43. https://doi.org/10.1590/S1519-38292008000100005

8. Santos LM, Silva JCR, Carvalho ESS, Carneiro AJS, Santana RCB, Fonseca MCC. Vivenciando o contato pele a pele com o recém-nascido no pós-parto como um ato mecânico. Rev Bras Enferm. 2014;67(2):202-7. https://doi.org/10.5935/0034-7167.20140026

9. Pillegi MC, Policastro A, Abramovici S, Cordioli, E, Deutsch AD. A amamentação na primeira hora de vida e a tecnologia moderna: prevalência e fatores limitantes. Einstein. 2008;6(4):467-72.

10. Tahsina T, Hossain AT, Ruysen H, Rahman AE, Day LT, Peven K, et al. Immediate newborn care, and breastfeeding: EN-BIRTH multi-country validation study. BMC Pregnancy Childbirth. 2021;21(Suppl 1):237. https://doi.org/10.1186/s12884-020-03421-w

11. Belo MNM, Azevedo PTACC, Belo MPM, Serva VMSBD, Batista Filho M, Figueiroa JN, et al. Aleitamento materno na primeira hora de vida em um Hospital Amigo da Criança: prevalência, fatores associados e razões para sua não ocorrência. Rev Bras Saude Matern Infant. 2014;14(1):65-72. https://doi.org/10.1590/S1519-38292014000100006

12. Sampaio A, Bousquat A, Barros C. Contato pele a pele ao nascer: um desafio para a promoção do aleitamento materno em maternidade pública no Nordeste brasileiro com o título de Hospital Amigo da Criança. Epidemiol Serv Saude. 2016;25(2):281-90. https://doi.org/10.5123/S1679-49742016000200007

13. World Health Organization (WHO). Ten steps to successful breastfeeding. Available from: https://www.who.int/nutrition/bfhi/ten-steps/en/

14. Boccolini CS, Carvalho ML, Oliveira MIC, Vasconcellos AGG. Fatores associados à amamentação na primeira hora de vida. Rev Saude Publica. 2011;45(1):69-78. https://doi.org/10.1590/S0034-89102010005000051

15. Escola Nacional de Saúde Pública, Fundação Oswaldo Cruz (FIOCRUZ). Nascer no Brasil: Inquérito nacional sobre parto e nascimento (2011 a 2012). Available from: https://nascernobrasil.ensp.fiocruz.br/?us_portfolio=nascer-no-brasil

16. Gedefaw G, Goedert MH, Abebe E, Demis A. Effect of cesarean section on initiation of breastfeeding: Findings from 2016 Ethiopian Demographic and Health Survey. PLoS One. 2020;15(12):e0244229. https://doi.org/10.1371/journal.pone.0244229

17. Boccolini CS, Boccolini PMM, Monteiro FR, Venâncio SI, Giugliani ER. Breastfeeding indicators trends in Brazil for three decades. Rev Saude Publica. 2017;51:108. https://doi.org/10.11606/S1518-8787.2017051000029

18. Negrini R, Ferreira RDS, Guimarães DZ. Value-based care in obstetrics: comparison between vaginal birth and cesarean section. BMC Pregnancy Childbirth. 2021;21(333). https://doi.org/10.1186/s12884-021-03798-2

19. Fundação Oswaldo Cruz (FIOCRUZ). Nascer no Brasil: pesquisa revela número excessivo de cesarianas. Available from: https://portal.fiocruz.br/noticia/nascer-no-brasil-pesquisa-revela-numero-excessivo-de-cesarianas

20. Brasil. Ministério da Saúde. Conselho Nacional de Saúde (CNS). Recomendação nº 038, de 23 de agosto de 2019. Available from: https://conselho.saude.gov.br/recomendacoes/2019/Reco038.pdf

21. World Health Organization (WHO). WHO Statement on cesarean section rates. Geneva: WHO, 2015.

22. Uchoa JL, Barbosa LP, Mendonça LBA, Lima FET, Almeida PC, Rocha SS. Influence of social determinants of health on skin-to-skin contact between mother and newborn. Rev Bras Enferm. 2021;74(Suppl 4):e20200138. https://doi.org/10.1590/0034-7167-2020-0138

23. Brasil. Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Atenção Básica. Saúde da criança: aleitamento materno e alimentação complementar. 2 ed. Brasília: Ministério da Saúde, 2015.