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# Breastfeeding in the first hour of life in a city in the countryside of Rio de Janeiro: associated factors

## *Amamentação na primeira hora de vida em município do interior do Rio de Janeiro: fatores associados*

## *Lactancia materna en la primera hora de vida en una ciudad del interior de Río de Janeiro: factores asociados*

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## Abstract

**Objective:** to analyze breastfeeding in the first hour of life and associated factors in a city in the countryside of Rio de Janeiro. **Method:** a cross-sectional online study, carried out between May 2021 and August 2022, with 97 parturient women in the municipality of Rio das Ostras. In the association between variables, the chi-square test and logistic regression were used. **Results:** among the participants, 77.3% gave birth in the public maternity hospital and 22.7% in the private maternity hospital. The prevalence of breastfeeding in the first hour of life in the delivery room and in rooming-in was, respectively, 21.6% and 58.3%, with significant differences between maternity hospitals. Postpartum women from the public maternity hospital were more likely to not breastfeed in the first hour of life. Having basic education increased the chances of the baby not being breastfed in the delivery room and not having early skin-to-skin contact and not breastfeeding breastfed in rooming-in. **Conclusion and implications for practice:** breastfeeding in the first hour of life did not reach recommended levels and different factors associated with its occurrence were identified, such as education level, place of childbirth and skin-to-skin contact. It is recommended that maternity hospitals implement humanized practices in newborn care to increase breastfeeding rates in the first hour of life.

**Keywords:** Breast Feeding; Rooming-in Care; Hospitals, Maternity; Infant, Newborn; Delivery Rooms.

## Resumo

**Objetivo:** analisar a amamentação na primeira hora de vida e os fatores associados em um município do interior do Rio de Janeiro. **Método:** estudo *online* transversal, realizado entre maio de 2021 e agosto de 2022, com 97 parturientes do município de Rio das Ostras. Na associação entre variáveis, adotaram-se o Teste Qui-Quadrado e regressão logística. **Resultados:** entre as participantes, 77,3% pariram na maternidade pública e 22,7% na maternidade privada. A prevalência da amamentação na primeira hora de vida na sala de parto e no alojamento conjunto foi, respectivamente, de 21,6% e 58,3%, com diferenças significativas entre as maternidades. Puérperas da maternidade pública tiveram mais chances de não amamentar na primeira hora de vida. Ter ensino básico aumentou as chances de o bebê não ser amamentado na sala de parto e não realizar contato pele a pele precoce, além de não ser amamentado no alojamento conjunto. **Conclusão e implicações para a prática:** a amamentação na primeira hora de vida não atingiu níveis preconizados, e distintos fatores associados à sua ocorrência foram identificados, como nível de instrução, local do parto e contato pele a pele. Recomenda-se que maternidades implementem as práticas humanizadas no cuidado ao recém-nascido, para elevar as taxas da amamentação na primeira hora de vida.

**Palavras-chave:** Aleitamento Materno; Alojamento Conjunto; Maternidades; Recém-Nascido; Salas de Parto.

## Resumen

**Objetivo:** analizar la lactancia materna en la primera hora de vida y los factores asociados en una ciudad del interior de Río de Janeiro. **Método:** estudio transversal en línea, realizado entre mayo de 2021 y agosto de 2022, con 97 parturientas en el municipio de Rio das Ostras. En la asociación entre variables se utilizó la prueba de chi-cuadrado y regresión logística. **Resultados:** entre las participantes, 77,3% dieron a luz en la maternidad pública y 22,7% en la maternidad privada. La prevalencia de lactancia materna en la primera hora de vida en paritorio y en alojamiento conjunto fue, respectivamente, del 21,6% y del 58,3%, con diferencias significativas entre maternidades. Las puérperas de la maternidad pública fueron más propensas a no amamantar en la primera hora de vida. Tener educación básica aumentó las posibilidades de que el bebé no fuera amamantado en la sala de partos y no tuviera contacto piel a piel temprano, además de no ser amamantado en el alojamiento conjunto. **Conclusión e implicaciones para la práctica:** la lactancia materna en la primera hora de vida no alcanzó los niveles recomendados y se identificaron diferentes factores asociados a su ocurrencia, como el nivel de instrucción, el lugar del parto y el contacto piel con piel. Se recomienda que las maternidades implementen prácticas humanizadas en la atención al recién nacido para incrementar las tasas de lactancia materna en la primera hora de vida.

**Palabras clave:** Lactancia Materna; Alojamiento Conjunto; Maternidades; Recién Nacido; Salas de Parto.

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## INTRODUCTION

Breast milk is the most complete and suitable food for newborns and infants, as its elements (proteins, carbohydrates, vitamins, mineral salts, fats and water) are essential for growth and neuropsychomotor development in childhood. Additionally, it is a protective factor against infections, diarrhea, respiratory diseases and allergies as well as strengthening the bond between mother and child.[1] In view of its benefits, the World Health Organization (WHO), the American Academy of Pediatrics (AAP) and the Ministry of Health (MoH) recommend exclusive breastfeeding (EBF) during the first six months of life and its continuity, associated to other foods, up to two years of age or older.[2,3]

Due to its importance, the widespread practice of breastfeeding can prevent around 823,000 deaths in children and 20,000 deaths in women from breast cancer each year.[4] However, worldwide, between 2013 and 2018, only 43.0% of newborns started breastfeeding in the first hour of life and only 41.0% of babies up to six months old were exclusively breastfed.[5] In this context, in 2017, approximately 78 million newborns in the world waited more than an hour to be placed on the breast, which means that only two out of five babies were placed on the breast in the first hour of life.[6]

In Brazil, there was a trend of growth in the prevalence of ESA, mainly between 1986 and 2020, increasing from 2.9% to 45.7%, an increase of approximately 1.2% per year.[7] However, in 2012, the 56th World Health Assembly set six global nutrition targets for 2025, including increasing the breastfeeding rate in the first six months of life to at least 50.0%,[8] and, for 2030, 70.0% of breastfeeding in the first hour of life, 70.0% of EBF, 80.0% in the first year of life and 60.0% up to two years,[9] parameters still far from being achieved in Brazil.

WHO and the United Nations Children's Fund (UNICEF) recommend that newborns be placed early in continuous skin-to-skin contact with their mothers, without clothes, in ventral decubitus on the mother's chest, between her breasts, also naked, right after birth, for at least an hour, encouraging them to identify when their babies are ready to be breastfed, promoting aid if necessary.[8] This practice in the first hour of life, which corresponds to the fourth step of the Baby-Friendly Hospital Initiative (BFHI), increases the prevalence and duration of EBF, in addition to reducing neonatal morbidity and mortality.[10,11]

Breastfeeding, as well as skin-to-skin contact, when performed in delivery rooms, also allows newborns to adapt more easily to the extrauterine environment, contributing to the baby's thermal regulation, stabilization of breathing, preservation of acid-base balance, reduction of crying, bacterial colonization by the mother's skin microbiota and prevention of neonatal hypoglycemia.[11]

Early sucking stimulates the maternal hypophysis to produce oxytocin and prolactin, leading to greater production and ejection of milk by the body, in addition to offering babies immunological and psychosocial benefits and strengthening the mother-infant bond. This practice also increases the likelihood that the child will receive colostrum, which contains important immunological properties for this stage of life, being extremely nutritious and easy to digest and accelerating intestinal mucosa maturation.[3]

Convergent to this, a study reported that babies born in a Baby-Friendly Hospital were more likely to be breastfed in the first hour of life, which reduced from 3.5 to 4.2% deaths among children aged seven days to six months. of life. It is also estimated that breastfeeding in the first hour of life can reduce 22% of neonatal deaths and 16% if all children were breastfed at least on the first day.[12]

However, some health institutions provide insufficient support and guidance on optimal breastfeeding, in addition to following archaic protocols, such as mother-infant separation immediately after birth and the provision of other foods and/or beverages to infants without clinical indication.[13] In another research, it was identified that some institutional norms, team resistance and unpreparedness, as well as poor infrastructure and insufficient number of employees, intervene in the postponement or non-performance of breastfeeding in the immediate post-childbirth period. Thus, institutional strategies are needed to encourage early breastfeeding by reducing unnecessary interventional procedures.[14]

Although the benefits of breastfeeding in the first hour of life are well demonstrated in the scientific literature, the rates referring to this practice, in different Brazilian contexts, are lower than recommended. Therefore, it is considered important to carry out local studies aimed at investigating the factors associated with its occurrence, in order to subsidize health policies and management, care and educational strategies, in order to transform the current scenario and boost rates. Therefore, this study aimed to analyze breastfeeding in the first hour of life and the associated factors in a city in the countryside of Rio de Janeiro.

## METHOD

This is a cross-sectional study, carried out through an online form on Google Forms, from May 12, 2021 to August 2, 2022, with the participation of mothers who gave birth in the municipality of Rio das Ostras, located in the countryside of the state of Rio de Janeiro, Brazil. It is worth mentioning that this municipality has only two maternity hospitals, one public and the other private, which provide assistance to the population of the territory covered and the surrounding cities.

Mothers who gave birth in the municipality, in the two years prior to the day the form was completed, over 18 years of age and who had internet access, were included. Illiterate women and/or children whose children died after birth were excluded. The sample was non-probabilistic, composed of 97 participants, considering the valid answers obtained in the data collection period determined for the study.

Participants were recruited through WhatsApp, Facebook and Instagram, through which messages were sent with the invitation (text in the form of a call with information about the study nature and confidentiality) and the link to access the Informed Consent Form (ICF) and the research form. By clicking on the link, users were directed to the first stage of the online

form, which included the ICF for reading and understanding and subsequent acceptance or refusal, based on the options "I agree" or "I disagree". If accepted, users would go to the second stage. Facing the refusal, it was directed to a thank you page.

In the second stage, there were three questions in order to filter the participation: 1) If a participant was over 18 years old; 2) If a participant was the mother of a child born in the municipality of Rio das Ostras in the last two years; 3) If a child born in the municipality of Rio das Ostras in the last two years died after birth. If the participants' answers were contrary to these questions, a thank you and termination of participation page was displayed and, otherwise, the third step of the form was displayed. This contained questions related to sociodemographic variables, pregnancy, childbirth and newborns in relation to the object of study. The mean time estimated to respond to the form was 15 minutes.

Dependent variables (outcomes) were "breastfeeding in the first hour of life in the delivery room" and "breastfeeding in the first hour of life in rooming-in". Sociodemographic characteristics and maternal and gestational characteristics that included ethnicity (white or non-white), marital status (lives without a partner or live with a partner), education level (primary or higher education), work outside the home (yes or no), living area (urban or rural), family income (up to two minimum wages or greater than or equal to two minimum wages), prenatal care (yes or no), complications during pregnancy (yes or no), parity (primiparous or multiparous), type of pregnancy (single or twin), place of childbirth (public maternity or private maternity), type of childbirth (vaginal or cesarean section), complications during childbirth (yes or no) and suspected or confirmed COVID-19 (yes or no). Independent variables on neonatal characteristics included baby's gender (male or female), resuscitation maneuver (yes or no), gestational age (preterm or full-term), birth weight (low birth weight or adequate weight), early skin-to-skin contact in the delivery room (yes or no) and post-childbirth referral (rooming-in or intermediate or intensive unit).

Data collected from Google Forms were exported directly to a Microsoft Office Excel® spreadsheet and, later, they were analyzed by IBM SPSS®, version 20.0, using descriptive statistics, for the characterization of participants with absolute and relative frequency measures, in addition to central trend (mean, minimum and maximum) and dispersion (standard). Moreover, an analysis of the association between outcome (dependent) and independent variables was carried out, using Pearson's chi-square test.

Subsequently, associations with $p<0.20$ were submitted to binary logistic regression, to estimate the probabilities related to the occurrence of breastfeeding in the first hour of life in the delivery room and in rooming-in among the participating mothers. For this, the Odds Ratio (OR) and their respective 95% Confidence Intervals were estimated. The investigated practices' prevalence was calculated from the number of participants who breastfed in the first hour of life in the two environments (delivery room and/or rooming-in) over the total number of study participants. $P<0.05$ values were considered statistically significant.

The study was submitted and approved by the Research Ethics Committee (REC) of the *Universidade Federal Fluminense*, for consideration and approval (CAAE (*Certificado de Apresentação para Apreciação Ética* - Certificate of Presentation for Ethical Consideration) 43016821.8.0000.5243 and Opinion 4.691.098), in accordance with Resolutions 466/2012 and 510/2016 of the Brazilian National Council of Health. It should be noted that participants had the guaranteed right to have a copy of the ICF, which was available for download.

## RESULTS

Thus, 97 (100.0%) mothers participated in the study. It is noteworthy that, of these, 75 (77.3%) gave birth in public maternity hospitals and 22 (22.7%) in private maternity hospitals in the region. Prevalence rates, among all participants, of breastfeeding in the first hour of life in the delivery room and rooming-in were, respectively, 21.6% (n=21) and 58.3% (n=56). However, it is worth emphasizing, initially, differences in the proportions between the two maternity hospitals, since the rates of these practices in the private maternity hospital were 72.7% (n=16), for breastfeeding in the first hour in the delivery room, and 95.5% (n=21), for rooming-in. On the other hand, in the public maternity, only 6.7% (n=5) of newborns were breastfed in the delivery room and only 47.3% (n=35) in rooming-in during the first hour of life.

As for maternal sociodemographic characteristics, the mean age was 26 years (SD=6.6), ranging from 18 to 46 years. The largest portion was of non-white mothers (n=69; 71.9%) and living without a partner (n=54; 55.7%). The education level of mothers with basic education (n=71; 73.2%) showed a higher proportion as well as those who did not work outside the home (n=64; 66.0%). In addition to this, almost all live in urban areas (n=90; 93.8%) and most have a family income of up to two minimum wages (n=63; 66.3%).

As for gestational conditions, the vast majority (n=96; 99.0%) had prenatal care consultations, with an average of eight consultations (SD=3.1), ranging from zero to 18 consultations. Regarding complications during pregnancy, 54 (56.2%) did not have any. Furthermore, all participants had a single pregnancy (n=97; 100.0%), most of them primiparous (n=52; 53.6%), with childbirth being carried out mostly in the public maternity hospital of the municipality (n=75; 77.3%), cesarean childbirth predominated (n=58; 59.8%) and without complications (n=80; 83.3%). With regard to SARS-CoV-2, none (n=97; 100.0%) had suspected or confirmed infection at childbirth.

Regarding neonatal characteristics, most infants were male (n=53; 54.6%) and a minority (n=6; 6.2%) underwent some type of resuscitation maneuver. The mean birth weight was 3,253.7 g (SD=542.1), ranging from 1,855 g to 4,500 g, with only 11 (11.3%) having low birth weight (<2,500 g), and 87 (92.6%) were born at term. Most (n=62; 63.9%) of them were not placed in early skin-to-skin contact with their mothers in the delivery room, and regarding referral after the delivery room, 85 (92.4%) were directed immediately to rooming-in (Table 1).

**Table 1.** Characterization of participants according to maternal sociodemographic variables, gestational conditions and neonatal characteristics (N=97). Rio das Ostras, RJ, Brazil, 2022.

| Variables | n (%) |
|---|---|
| **Ethnicity*** | |
| White | 27 (28.1%) |
| Non-white | 69 (71.9%) |
| **Marital status** | |
| Living without a partner | 54 (55.7%) |
| Living with a partner | 43 (44.3%) |
| **Education level** | |
| Primary education | 71 (73.2%) |
| Higher education | 26 (26.8%) |
| **Work outside the home** | |
| Yes | 33 (34.0%) |
| No | 64 (66.0%) |
| **Residence area*** | |
| Urban | 90 (93.8%) |
| Rural | 6 (6.2%) |
| **Family income*** | |
| Up to 2 minimum wages | 63 (66.3%) |
| Greater than or equal to 2 minimum wages | 32 (33.7%) |
| **Prenatal care** | |
| Yes | 96 (99.0%) |
| No | 1 (1.0%) |
| **Complications during pregnancy*** | |
| Yes | 42 (43.8%) |
| No | 54 (56.2%) |
| **Parity** | |
| Primiparous | 52 (53.6%) |
| Multiparous | 45 (46.4%) |
| **Place of childbirth** | |
| Public maternity | 75 (77.3%) |
| Private maternity | 22 (22.7%) |
| **Type of childbirth** | |
| Vaginal | 39 (40.2%) |
| Caesarean section | 58 (59.8%) |
| **Complications in childbirth*** | |
| Yes | 16 (16.7%) |
| No | 80 (83.3%) |
| **Sex of baby** | |
| Male | 53 (54.6%) |
| Female | 44 (45.4%) |
| **Resuscitation maneuver** | |
| Yes | 6 (6.2%) |
| No | 91 (93.8%) |
| **Gestational age*** | |
| Preterm | 7 (7.4%) |
| Full-term | 87 (92.6%) |
| **Birth weight** | |
| Low weight | 11 (11.3%) |
| Normal weight | 86 (88.7%) |
| **Early skin-to-skin contact in the delivery room** | |
| Yes | 35 (36.1%) |
| No | 62 (63.9%) |
| **Postpartum referral*** | |
| Rooming-in | 85 (92.4%) |
| Intermediate or intensive unit | (7.6%) |

*The variable was missing.

In the association between outcome variables and sociodemographic characteristics and gestational conditions, "ethnicity" (p=0.005), "education level" (p=0.000), "work outside the home" (p=0.045), "family income" (p=0.000) and "place of childbirth" (p=0.000) were the variables that showed statistical significance with "breastfeeding in the first hour of life in the delivery room". Moreover, the outcome variable "breastfeeding in the first hour of life in rooming-in" was also statistically associated with "ethnicity" (p=0.019) and "place of childbirth" (p=0.000) (Table 2).

In the association between dependent variables and neonatal characteristics, "early skin-to-skin contact in the delivery room" was associated (p=0.000) with "breastfeeding in the first hour of life in the delivery room". As for the outcome variable "breastfeeding in the first hour of life in rooming-in", "resuscitation maneuver" (p=0.003), "gestational age" (p=0.016), again "early skin-to-skin contact in the delivery" (p=0.000) and "postpartum referral" (p=0.038) were associated (Table 3).

After binary logistic regression, the education level (OR=5.725; 95% CI: 1.24-26.31; p=0.025) remained as a factor associated with "breastfeeding in the first hour of life in the delivery room". Thus, having primary education increases by approximately six times the chances of the baby not being breastfed in this space compared to mothers with higher education. Furthermore, the place where the birth took place (OR=16.154; 95% CI: 3.46-75.40; p=0.000) also remained an associated factor, also increasing the chances (about 16 times) for the non-occurrence of this practice in public maternity. Likewise, the place of childbirth (OR=20.676; 95% CI: 2.62-162.89; p=0.004) increased by approximately 21 times the chances of newborns in the public maternity hospital not being breastfed in the first hour of life in rooming-in.

However, no variable remained associated in the logistic regression between neonatal characteristics and breastfeeding in the first hour of life in the delivery room. Regarding the same characteristics with breastfeeding in the first hour of life in rooming-in, early skin-to-skin contact in the delivery room (OR= 5.758; 95% CI: 1.84-17.97; p=0.003) remained associated. Not being placed in contact with the mother's breast in the delivery room increases the chances of not being breastfed in the first hour in this environment by approximately six times (Table 4).

## DISCUSSION

It was identified in the present study that the prevalence rates of breastfeeding in the first hour of life in the delivery room and rooming-in did not reach recommended levels, and different factors associated with its occurrence were identified. The findings were similar to those found in a study carried out in the same municipality in question in 2021, however, this only brought the reality of the public maternity hospital in the locality, where the breastfeeding rate in the first hour of life was 63.2%.[2]

The current results also converged with other national studies: one from Minas Gerais, in which immediate contact was 30.0%,[11] and one from São Paulo, which showed a prevalence of 37.2% of skin-to-skin contact with breastfeeding in the first hour of life.[15] In another survey, carried out in Pernambuco, the breastfeeding rate in the first hour of life was 28.7%,[3] which corroborates studies

**Table 2.** Association between breastfeeding in the first hour of life in the delivery room and in rooming-in and maternal sociodemographic characteristics and gestational conditions (N=97). Rio das Ostras, RJ, Brazil, 2022.

| Variables | Breastfeeding in the first hour of life in the delivery room | | P** | Breastfeeding in the first hour of life in rooming-in | | P** |
|---|---|---|---|---|---|---|
| | YES | NO | | YES | NO | |
| | n (%) | n (%) | | n (%) | n (%) | |
| **Ethnicity*** | | | **0.005** | | | **0.019** |
| White | 11 (52.4%) | 16 (21.3%) | | 21 (37.5%) | 6 (15.4%) | |
| Non-white | 10 (47.6%) | 59 (78.7%) | | 35 (62.5%) | 33 (84.6%) | |
| **Marital status** | | | 0.182 | | | 0.386 |
| Living without a partner | 9 (42.9%) | 45 (59.2%) | | 33 (58.9%) | 20 (50.0%) | |
| Living with a partner | 12 (57.1%) | 31 (40.8%) | | 23 (41.1%) | 20 (50.0%) | |
| **Education level** | | | **0.000** | | | 0.074 |
| Primary education | 5 (23.8%) | 66 (86.8%) | | 37 (66.1%) | 33 (82.5%) | |
| Higher education | 16 (76.2%) | 10 (13.2%) | | 19 (33.9%) | 7 (17.5%) | |
| **Work outside the home** | | | **0.045** | | | 0.231 |
| Yes | 11 (52.4%) | 22 (28.9%) | | 22 (39.3%) | 11 (27.5%) | |
| No | 10 (47.6%) | 54 (71.1%) | | 34 (60.7%) | 29 (72.5%) | |
| **Residence area*** | | | 0.181 | | | 0.645 |
| Urban | 21 (100.0%) | 69 (92.0%) | | 53 (94.6%) | 36 (92.3%) | |
| Rural | 0 (0.0%) | 6 (8.0%) | | 3 (5.4%) | 3 (7.7%) | |
| **Family income*** | | | **0.000** | | | 0.111 |
| Up to 2 minimum wages | 5 (25.0%) | 58 (77.3%) | | 32 (59.3%) | 30 (75.0%) | |
| Greater than or equal to 2 minimum wages | 15 (75.0%) | 17 (22.7%) | | 22 (40.7%) | 10 (25.0%) | |
| **Prenatal care** | | | 0.597 | | | 0.234 |
| Yes | 21 (100.0%) | 75 (98.7%) | | 56 (100.0%) | 39 (97.5%) | |
| No | 0 (0.0%) | 1 (1.3%) | | 0 (0.0%) | 1 (2.5%) | |
| **Complications during pregnancy*** | | | 0.555 | | | 0.182 |
| Yes | 8 (36.1%) | 34 (45.3%) | | 21 (37.5%) | 20 (51.3%) | |
| No | 13 (61.9%) | 41 (54.7%) | | 35 (62.5%) | 19 (48.7%) | |
| **Parity** | | | 0.064 | | | 0.782 |
| Primiparous | 15 (71.4%) | 37 (48.7%) | | 31 (55.4%) | 21 (52.5%) | |
| Multiparous | 6 (28.6%) | 39 (51.3%) | | 25 (44.6%) | 19 (47.5%) | |
| **Place of childbirth** | | | **0.000** | | | **0.000** |
| Public maternity | 5 (23.8%) | 70 (92.1%) | | 35 (62.5%) | 39 (97.5%) | |
| Private maternity | 16 (76.2%) | 6 (7.9%) | | 21 (37.5%) | 1 (2.5%) | |
| **Type of childbirth** | | | 0.468 | | | 0.752 |
| Vaginal | 7 (33.3%) | 32 (42.1%) | | 22 (39.3%) | 17 (42.5%) | |
| Caesarean section | 14 (66.7%) | 44 (57.9%) | | 34 (60.7%) | 23 (57.5%) | |
| **Complications in childbirth*** | | | 0.740 | | | 0.104 |
| Yes | 4 (19.0%) | 12 (16.0%) | | 6 (10.7%) | 9 (23.1%) | |
| No | 17 (81.0%) | 63 (84.0%) | | 50 (89.3%) | 30 (76.9%) | |

**Source:** own elaboration. * The variable was missing. ** Chi-square test

**Table 3.** Association between breastfeeding in the first hour of life in the delivery room and rooming-in and neonatal characteristics (N=97). Rio das Ostras, RJ, Brazil, 2022.

| Variables | Breastfeeding in the first hour of life in the delivery room | | | Breastfeeding in the first hour of life in rooming-in | | |
|---|---|---|---|---|---|---|
| | YES n (%) | NO n (%) | P** | YES n (%) | NO n (%) | P** |
| **Sex of baby** | | | 0.795 | | | 0.703 |
| Male | 12 (57.1%) | 41 (53.9%) | | 30 (53.6%) | 23 (57.5%) | |
| Female | 9 (42.9%) | 35(46.1%) | | 26 (46.4%) | 17 (42.5%) | |
| **Resuscitation maneuver** | | | 0.184 | | | **0.003** |
| Yes | 0 (0.0%) | 6 (7.9%) | | 0 (0.0%) | 6 (15.0%) | |
| No | 21 (100.0%) | 70 (92.1%) | | 56 (100.0%) | 34 (85.0%) | |
| **Gestational age*** | | | 0.140 | | | **0.016** |
| Preterm | 0 (0.0%) | 7 (9.6%) | | 1 (1.9%) | 6 (15.0%) | |
| Full-term | 21 (100.0%) | 66 (90.4%) | | 53 (98.1%) | 34 (85.0%) | |
| **Early skin-to-skin contact in the delivery room** | | | **0.000** | | | **0.000** |
| Yes | 21 (100.0%) | 14 (18.4%) | | 29 (51.8%) | 6 (15.0%) | |
| **No** | 0 (0.0%) | 62 (81.6%) | | 27 (48.2%) | 34 (85.0%) | |
| **Low birth weight** | | | 0.064 | | | 0.116 |
| Low weight | 0 (0.0%) | 11 (14.5%) | | 4 (7.1%) | 7 (17.5%) | |
| Normal weight | 21 (100%) | 65(85.5%) | | 52 (92.9%) | 33 (82.5%) | |
| **Postpartum referral*** | | | 0.665 | | | **0.038** |
| Rooming-in | 18 (94.7%) | 67 (91.8%) | | 51 (98.1%) | 34 (87.2%) | |
| Intermediate or intensive unit | 1 (5.3%) | 6 (8.2%) | | 1 (1.9%) | 5 (12.8%) | |

**Source:** own elaboration. * The variable was missing. ** Chi-square test.

**Table 4.** Odds Ratio by binary logistic regression for breastfeeding in the first hour of life in the delivery room and rooming-in (N=97). Rio das Ostras, RJ, Brazil, 2022.

| Variables | Breastfeeding in the first hour of life in the delivery room | p-value*** |
|---|---|---|
| | OR* (95% CI)** | |
| Education level | 5.725 (1.24-26.31) | 0.025 |
| Place of childbirth | 16.154 (3.46-75.40) | 0.000 |
| **Variables** | **Breastfeeding in the first hour of life in rooming-in** | **p-value*** ** |
| | **OR* (95% CI)**** | |
| Place of childbirth | 20.676 (2.62-162.89) | 0.004 |
| Early skin-to-skin contact in the delivery room | 5.758 (1.84-17.97) | 0.003 |

**Source:** own elaboration. * Odds Ratio. ** Confidence Interval. *** Chi-square test.

that reveal that these practices in northeastern Brazil tend to be lower than in other regions, especially the Southeast.[7]

Internationally, two studies in different regions of India, one from 2018 and the other from 2020, presented discrepant results, revealing that this practice is uneven not only in Brazil, but in the world. In the first, 30.0% of women breastfed in the first hour of life after childbirth,[16] and in the second, 75.0%.[17] Also, in a survey carried out in Italy, there was contact with the mother's breast in delivery rooms in 100.0% of the wards observed,[18] contrasting with current findings of this study. In Bangladesh, breastfeeding in the first hour of life took place in 64.0% of analyzed health units,[19] approaching the index surveyed.

It is recommended that every reactive newborn that does not present risks be placed in the mother's breast, skin to skin,

soon after birth, in the first hour of life, and that routine exams and procedures are performed only after the implementation of this contact, unless medically prescribed.[20,21] Thus, keeping newborns healthy with their mothers, from birth to rooming-in, is a factor associated with a greater possibility of early initiation of breastfeeding during hospitalization, as observed in several studies[3,8,15,19,22] and current findings.

In this research, this practice did not happen satisfactorily in any of the maternity hospitals, however, initially, nothing contraindicated that most of these babies had early skin-to-skin contact and were breastfed in the first hour of life, since pregnancies were of usual risk, the were born with good vitality and good adaptation to extrauterine life, in addition to no mother having suspicion or diagnosis of COVID-19 at childbirth.

Thus, breastfeeding in the first hour should ideally take place while still in the delivery room, and if this is not possible, immediately upon arrival at rooming-in. However, although breastfeeding in the first hour of life in rooming-in has increased compared to breastfeeding in the delivery room, this index is not at an adequate level either. It is noteworthy that none of the maternity hospitals in the investigated municipality is a Baby-Friendly Hospital (BFH), which, according to the literature, could contribute to better breastfeeding indicators in the maternity hospital.[12]

As for maternal sociodemographic characteristics, ethnicity was associated with the analyzed practices, showing that white mothers breastfeed more in the first hour both in the delivery room and in rooming-in, consistent with an investigation in which mothers who declared themselves non-black had a higher breastfeeding rate in the first hour of life.[23]

Education level was also associated with breastfeeding in the delivery room, where having basic education increased the chances of babies not receiving breast milk in this scenario, compared to mothers with higher education. This corroborates the finding of a study where it was understood that the higher the education level, the greater the chance of early breastfeeding. Mothers with higher education are more receptive to health promotion campaigns and are more empowered within the family to make decisions regarding their children's health.[24] Another investigation also highlighted that education makes parents more informed about the benefits of breastfeeding in the first hour of life.[25]

On the other hand, a survey reported that illiterate women had greater adherence to breastfeeding in the first hour of life, compared to those with a higher education level. However, this fact was due to the fact that cesarean rates were higher among women with higher education level,[3] taking into account that surgical childbirth makes early skin-to-skin contact and breastfeeding initiation, difficult, either because of anesthesia and/or because of not being able to stay in certain positions, due to pain in the postoperative period, in addition to delaying going to rooming-in.[3]

As for work outside the home, most women who do not work did not breastfeed their children in the delivery room, a fact that contradicts a study that showed that having a job decreases breastfeeding initiation onset and duration.[26] Furthermore, family income, which also appeared to be associated with the same practice, converges with the finding of two studies that show that low-income women had an increased risk of delay in starting breastfeeding.[26,27]

A relevant factor for the two outcome variables was place of childbirth, as in three other studies.[17,28,29] Both in breastfeeding in the delivery room and in rooming-in, it was shown that being born in a public maternity hospital decreases the chances of babies being breastfed in the first hour of life, but most findings in the literature point to the opposite. Studies indicate that childbirth performed in the public service contributed to breastfeeding, attributing this effect to public policies aimed at maternal and child health, in addition to believing that in the private service there is a greater number of cesarean sections.[3,28,29] However, even if the recommended cesarean rate is between 10.0% and 15.0%,[30] in the present investigation, most childbirths were cesarean sections in both maternity hospitals. Even so, the breastfeeding rate in delivery rooms and in the first hour of life in rooming-in was higher in the private service.

Furthermore, it was found that gestational age and the resuscitation maneuver were factors associated with breastfeeding in the first hour of life in rooming-in, since premature infants and those who needed some kind of support in the transition to extrauterine life are not breastfed early, because they have a greater need for professional interventions, which corroborates the literature.[31-33] In fact, referral after childbirth was associated with the same practice, considering that mother and baby separation to carry out interventions generates prolonged periods of distance between them, postponing the move to rooming-in and reducing the likelihood of early breastfeeding initiation, as also seen in other findings.[3,8,34]

Therefore, it is noted, with the research, that investments are needed in health policies, especially in the municipality that makes up the study scenario, which promote and protect breastfeeding from the first hour of life, as well as in training of professionals in the area, in public and private services, in order to transform the current scenario, since the rates of this practice are still unsatisfactory. The health team that works with prenatal care, delivery rooms and rooming-in needs to join efforts to improve these rates, which includes guiding families from pregnancy on the importance of early skin-to-skin contact and breastfeeding in the first hour. This will even favor the empowerment of women so that they will feel empowered to freely express the desire to come into skin-to-skin contact with their children and breastfeed them even in delivery rooms.

## CONCLUSION AND IMPLICATIONS FOR PRACTICE

The prevalence of breastfeeding in the first hour of life, in the delivery room and in rooming-in did not reach the recommended levels. The education level remained associated with breastfeeding in the delivery room; therefore, the non-occurrence of this practice

was approximately six times higher among mothers with basic education. Also, the place where the delivery took place remained associated with the same practice and also with breastfeeding in the first hour in rooming-in, showing 16 times more chances of babies born in the public maternity not being breastfed in the delivery room and 21 times more likely of not being breastfed in the first hour of life in rooming-in. Moreover, the probability of being breastfed in the first hour of life in this space was six times greater among newborns placed in skin-to-skin contact while still in the delivery room.

Difficulties with data collection and number of participants are pointed out as limitations of this study. However, even in the face of this limitation, the research proved to be very important in terms of knowing the local reality about breastfeeding practices in the municipality, both in public and private maternity hospitals, in order to, with this, subsidize effective measures that collaborate with the increase of these indices.

Thus, early skin-to-skin contact is a predictor for early breastfeeding to occur. Therefore, it is recommended that hospitals standardize the postponement of unnecessary and/or non-urgent procedures and implement humanized practices based on scientific evidence in newborn care, in order to increase breastfeeding rates in the first hour of life.

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