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# PREVALENCE AND FACTORS ASSOCIATED WITH BREASTFEEDING IN THE FIRST HOUR OF LIFE: A CROSS-SECTIONAL STUDY

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## ABSTRACT

**Objective:** To analyze the prevalence and factors associated with breastfeeding in the first hour of life.
**Methods:** Cross-sectional study made with postpartum women who were patients at public maternity hospitals in the city of Teresina, Piauí, Brazil, between 2020-2021. Aspects such as sociodemographic and behavioral data of the woman and her intimate partner, obstetric characteristics, in addition to intimate partner violence during pregnancy were evaluated. A hierarchical analysis was performed using multiple logistic regression, in which the adjusted *odds ratio* (AOR) and 95% confidence intervals (CI95%) were calculated.
**Results:** 413 women were interviewed. There was a 66.8% prevalence of breastfeeding in the first hour of life. Factors such as the presence of a companion (AOR=1.66; CI95% 1.34-2.29), skin-to-skin contact with the newborn (AOR=2.14; CI95% 1.04–4.38) and experiencing a natural birth (AOR=2.06; CI95% 1.90-4.73) increased the chances of breastfeeding in the first hour. The lack of a partner (AOR=0.47; CI95% 0.25-0.86) and having a non-white partner (AOR=0.45; CI95% 0.24-0.83) were factors that decreased the chances of breastfeeding.
**Conclusions:** The prevalence of breastfeeding in the first hour of life was considered good. Obstetric and childbirth care factors contributed positively to the practice of breastfeeding. The collected data reinforce the importance of offering quality assistance during the parturition process.

**DESCRIPTORS:** Breastfeeding. Postpartum period. Maternal-child health. Maternity hospitals. Cross-sectional studies.

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## PREVALÊNCIA E FATORES ASSOCIADOS À AMAMENTAÇÃO NA PRIMEIRA HORA DE VIDA: ESTUDO TRANSVERSAL

### RESUMO

**Objetivo:** Analisar a prevalência e fatores associados à amamentação na primeira hora de vida.
**Métodos:** Estudo transversal com puérperas de maternidades públicas de Teresina, Piauí, Brasil, entre 2020-2021. Foram avaliados dados sociodemográficos e comportamentais da mulher e do parceiro íntimo, características obstétricas, além da violência por parceiro íntimo na gravidez. Realizou-se análise hierarquizada por regressão logística múltipla, com cálculo de *odds ratio* ajustada ($OR_{aj}$) e intervalos de confiança de 95% (IC95%).
**Resultados:** Foram entrevistadas 413 mulheres. Houve prevalência de amamentação na primeira hora de vida de 66,8%. A presença de acompanhante ($OR_{aj}$=1,66; IC95% 1,34-2,29), o contato com pele a pele com o recém-nascido ($OR_{aj}$=2,14; IC95% 1,04-4,38) e ter parto normal ($OR_{aj}$=2,06; IC95% 1,90-4,73) aumentaram as chances de amamentação na primeira hora. Ausência de parceria ($OR_{aj}$=0,47; IC95% 0,25-0,86) e parceria com pele não branca ($OR_{aj}$=0,45; IC95% 0,24-0,83) diminuíram as chances de amamentar.
**Conclusões:** A prevalência da amamentação na primeira hora de vida foi considerada boa. Fatores obstétricos e de assistência ao parto contribuíram positivamente para o aleitamento materno. Os dados reforçam a importância de ofertar assistência de qualidade no processo de parturição.



**DESCRITORES:** Aleitamento materno. Período pós-parto. Saúde materno-infantil. Maternidades. Estudos transversais.



## PREVALENCIA Y FACTORES ASOCIADOS A LA LACTANCIA EN LA PRIMERA HORA DE VIDA: ESTUDIO TRANSVERSAL

### RESUMEN

**Objetivo:** Analizar la prevalencia y los factores asociados a la lactancia materna en la primera hora de vida.
**Método:** Estudio transversal con puérperas de maternidades públicas de Teresina, Piauí, Brasil, entre 2020 y 2021. Se evaluaron datos sociodemográficos y conductuales de la mujer y su pareja, características obstétricas, además de la violencia de pareja durante el embarazo. El análisis jerárquico se realizó mediante regresión logística múltiple, con cálculo de *odds ratio* ajustado ($OR_{aj}$) e intervalos de confianza del 95% (IC95%).
**Resultados:** se entrevistó a 413 mujeres. Hubo una prevalencia de lactancia materna en la primera hora de vida del 66,8%. La presencia de acompañante ($OR_{aj}$=1,66; IC95% 1,34-2,29), el contacto piel con piel con el recién nacido ($OR_{aj}$=2,14; IC95% 1,04-4,38) y haber tenido un parto natural ($OR_{aj}$=2,06; IC95% 1,90-4,73) aumentaron las posibilidades de amamantamiento en la primera hora. La falta de pareja ($OR_{aj}$=0,47; IC95% 0,25-0,86) y la pareja con piel no blanca ($OR_{aj}$=0,45; IC95% 0,24-0,83) disminuyeron las posibilidades de lactancia materna.
**Conclusiones:** La prevalencia de lactancia materna en la primera hora de vida se consideró buena. Los factores relacionados con la atención obstétrica y con el parto contribuyeron positivamente a la lactancia materna. Los datos refuerzan la importancia de ofrecer una asistencia de calidad durante el proceso de parto.



**DESCRIPTORES:** Lactancia materna. Período posparto. Salud maternoinfantil. Hospitales de maternidad. Estudios transversales.

## INTRODUCTION

Breastfeeding is an important public health issue. Although relevant for all children and families regardless of their socioeconomic status, in low- and middle-income countries it offers significant protection against childhood infections, malocclusion, and potential long-term benefits on obesity and type 2 diabetes[1]. The World Health Organization recommends that breastfeeding be initiated within one hour of birth and maintained exclusively for the first six months so that infants can achieve optimal growth, development and health[2]. It is estimated that the lack of breastfeeding causes around 595,000 annual deaths among children (between 6 months old and 5 years old) from diarrhea and pneumonia and, among women, around 98,000 deaths from breast and ovarian cancer[3].

Globally, however, only 40% of infants under six months of age are exclusively breastfed. In the Americas, 38% of them are fed exclusively with breast milk until six months of age and only 32% until 24 months of age[4]. Brazilian data show that the prevalence of exclusive breastfeeding for infants up to 6 months of age increased by 34.2% between 1986 and 2006, but stabilized thereafter[5]. In a 1982-2015 cohort study conducted in the city of Pelotas, Rio Grande do Sul, the prevalence of breastfeeding at 12 months of age increased from 16% to 41%, with a greater propensity to breastfeed among black women and among the poorest, but in 2015 this difference had disappeared[6].

Timely initiation of breastfeeding has been considered one of the key points to provide adequate infant feeding practices. There is a consensus that skin-to-skin contact between the newborn (NB) and their mother immediately after delivery, in the first hour after birth, increases the chances of a successful and continued practice of breastfeeding, thus being considered a reliable marker to determine breastfeeding success and reduce early neonatal deaths[2]. Several maternal and neonatal factors, in addition to institutional practices performed by the maternity hospitals and professionals responsible for childbirth may lead to lower prevalence of breastfeeding in the first hour of life [2,7]. Some of the main obstacles are cesarean deliveries, prematurity, low education level and low maternal age, in addition to the absence of prenatal care appointments and lack of guidance on breastfeeding during prenatal care[7,8].

Traumatic experiences such as intimate partner violence may also be barriers for breastfeeding initiation and continuation as the woman's support network is a significant factor[2,7]. In addition to harming women's physical and mental health, violence committed by an intimate partner during pregnancy increases the likelihood of pregnancy and fetal complications such as spontaneous and induced abortion, premature labor, low birth weight, postnatal depression and delayed initiation of breastfeeding[9]. Women who experienced partner violence in the previous year or during pregnancy were less likely to initiate and continue breastfeeding[10], and it was observed that the most significant impacts occurred in cases of serious and recent aggression[11–12].

It is known that the prevalence of breastfeeding in the first hour of life may vary between sociocultural scenarios, causing differences between countries[4]. Furthermore, popular beliefs about breastfeeding and the quality of prenatal care may also affect breastfeeding[2]. Information about the factors associated with the initiation and duration of breastfeeding may lead to more specific strategies. Despite being a widely discussed topic, there is still a lack of national data on the practice of breastfeeding in the first hour, such as, for example, its association with intimate partner violence during pregnancy.

The objective of this study was to analyze the prevalence and factors associated with breastfeeding in the first hour of life.

## METHOD

This is a cross-sectional study carried out with postpartum women in the city of Teresina, Piauí, Brazil, based on the *STrengthening the Reporting of OBservational studies in Epidemiology* (STROBE) guidelines[13].

The five public maternity hospitals located in the city of Teresina were selected and all were duly accredited by the Iniciativa Hospital Amigo da Criança [Baby-Friendly Hospital Initiative]. Women who were hospitalized due to the birth of their children in the defined maternity hospitals were included. Those who presented some sort of impediment to early breastfeeding such as positive HIV serology on their medical record, hospitalization in an Intensive Care Unit (ICU), treatment of breast cancer or severe behavioral disorders were excluded, in addition to postpartum women whose newborns were admitted to a neonatal ICU and/or in cases of fetal or neonatal deaths.

Non-probabilistic consecutive sampling was used, and the sample size was calculated based on the total number of women who had live births in 2018 in the selected maternity hospitals (n=15,622) and on the expected ratio of 50% of breastfeeding in the first hour of life[14] since there is no available data on the population of Teresina. With a confidence level of 95%, a margin of error of 5%, a power of 80% and an increase of 10% for losses, there was an estimate of 413 women for the interview, stratified according to the weight of each maternity hospital regarding the ratio of births (percentage of childbirths/participants: maternity hospital 1 – 53.0%/219; maternity hospital 2 – 14.3%/59; maternity hospital 3 – 11.6%/48; maternity hospital 4 – 10.9%/45; maternity hospital 5 10.2%/42).

Data collection took place between December 2020 and March 2021 (when the sample size was reached) and was conducted by a trained researcher. The postpartum women were selected based on the list of hospitalizations in the last 48 hours provided by the institutions. After applying the inclusion and exclusion criteria, all eligible postpartum women were invited to participate. Two instruments were applied in face-to-face interviews, in a reserved area of the rooming-in sector or in a private room (when provided), during consecutive days and in the afternoon shift, at least six hours after birth. The first instrument consisted of a form with closed questions about sociodemographic aspects (age group; skin color; schooling; professional occupation; own income; marital status) and behavioral aspects (during pregnancy: alcohol use; tobacco use; illicit drug use) related to the woman and her intimate partner (age group; skin color; schooling; professional occupation; family provider status; alcohol use; tobacco use; illicit drug use), obstetric characteristics (number of pregnancies; number of deliveries; number of abortions; planned pregnancy; feelings regarding unplanned pregnancy; number of prenatal care appointments; guidance on breastfeeding during prenatal care; guidance on physical activity during prenatal care; type of delivery; companion during labor; skin-to-skin contact with the newborn; gestational age; newborn's birth weight; newborn's gender; 5-minute Apgar score; breastfeeding in the first hour of life) and history of violence (physical, psychological, sexual; witnessed maternal aggression). Gestational age, newborn's weight and the 5-minute Apgar score were taken from medical records.

The second instrument investigated intimate partner violence during pregnancy using data from the *World Health Organization Violence Against Women*, duly adapted to be applied in different cultural contexts and already validated in Brazil[12,15]. It consists of 13 items that include 04 questions about psychological violence, 06 questions about physical violence and 03 questions about sexual violence. Reports in which the interviewees stated that they had suffered at least one type of aggression (physical and/or sexual and/or psychological) from their partners during pregnancy were considered cases of violence.

Bivariate analysis was performed using Pearson's chi-square test/Fisher's exact test to evaluate the association between breastfeeding in the first hour of life and each independent variable, in which the crude *odds ratio* (COR) and 95% confidence intervals (95%CI) were calculated. Regarding the multivariate analysis, the independent variables were hierarchically ranked, in accordance with previous studies[2,8,10,12,14]. Thus, the obstetric variables were considered proximal determinants. As intermediate determinants, the following aspects were defined: intimate partner violence during pregnancy, history of violence and behavioral characteristics of the woman and her intimate partner. As distal determinants, the sociodemographic variables of the woman and her partner were defined (Figure 1). The hierarchical analysis followed the distal-proximal direction. As an inclusion criterion for the variables in the model, $p \leq 0.20$ was considered in the bivariate analysis. Adjusted *odds ratio* (AOR) and CI95% were estimated using multiple logistic regression. Initially, only variables at the distal level were included, and those with a value of $p \leq 0.05$ remained in the model (model 1). Then, those at the intermediate level were included and those with $p \leq 0.05$ remained and were adjusted to the previous level (model 2). In the final model (model 3), variables at the proximal level were included, adjusted by those from the previous level, and those with $p < 0.05$ were considered associated with the outcome. Missing data in the variables were excluded from the bi- and multivariate analyses.

The project was approved by the Research Ethics Committee of the Universidade Federal do Piauí in compliance with the guidelines for regulating research involving human beings. All participants signed the Free and Informed Consent Form.

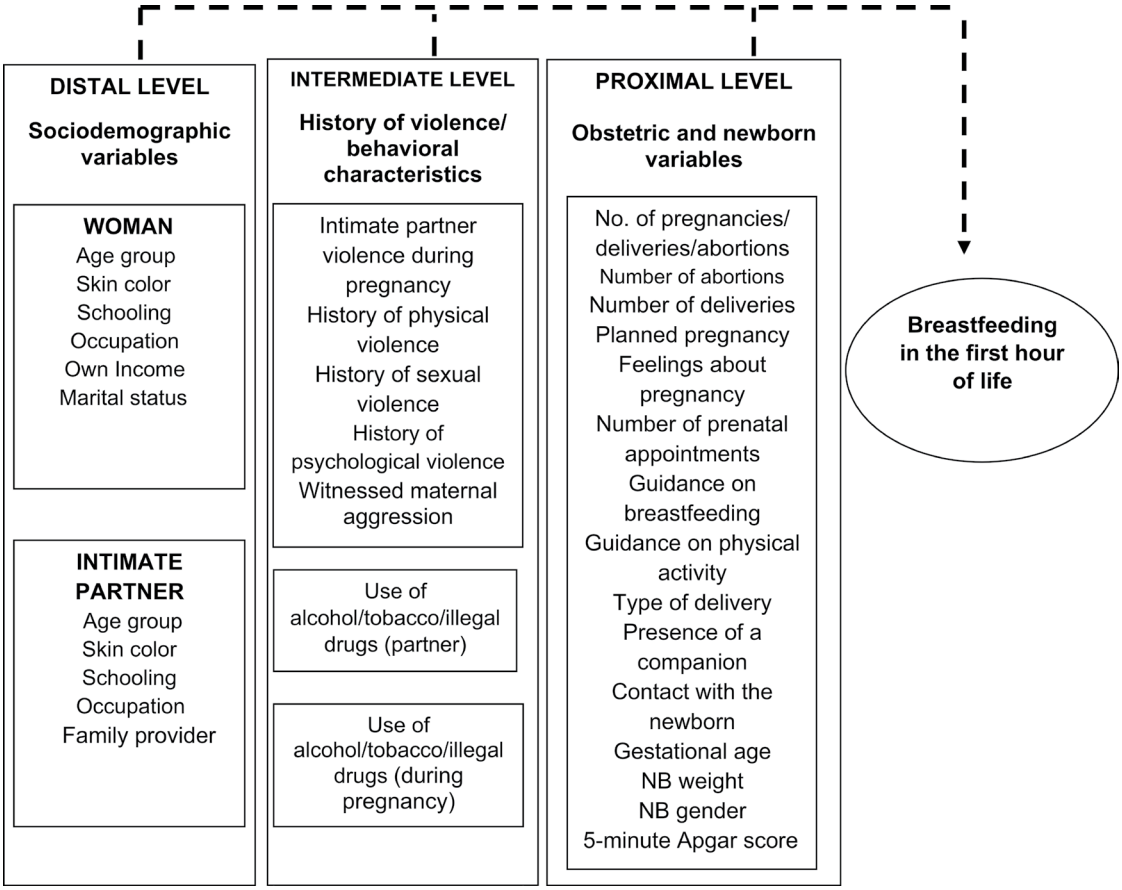


**Figure 1** – Hierarchical model of breastfeeding determinants in the first hour of life.

## RESULTS

413 postpartum women were interviewed and there were 12 refusals and 05 exclusions (due to admission of the woman or the newborn to the ICU and due to neonatal death). The average age

of the participants was 27.1 years (±6.5 years). Table 1 shows that there was a greater frequency of women between 20-29 years old (49.9%), non-white (90.6%), with 9 to 11 years of study (62.7%), unoccupied (81.8%), with no income of their own (81.8%) and with an intimate partner (86.0%). Most of them reported not having consumed alcohol (93.9%), tobacco (97.8%) and not having consumed illicit drugs (99.5%) during pregnancy. In the bivariate analysis, it was shown that women without a partner had a lower chance (COR =0.47; CI95% 0.27-0.83) of breastfeeding in the first hour of life.

**Table 1** – Association between sociodemographic and behavioral variables of the woman/her intimate partner and the practice of breastfeeding in the first hour of life – Teresina, Piauí, 2020-2021. (n=413)

| Variables | All | | Breastfeeding in the first hour YES | | COR* | CI95%† | P |
|---|---|---|---|---|---|---|---|
| | n | % | n | % | | | |
| **Woman** | | | | | | | |
| Age group (years old) | | | | | | | |
| 10-19 | 72 | 17.4 | 52 | 72.2 | 1 | | |
| 20-29 | 206 | 49.9 | 141 | 68.4 | 0.83 | 0.46-1.51 | 0.446‡ |
| 30-39 | 124 | 30.0 | 76 | 61.3 | 0.61 | 0.32-1.14 | |
| ≥40 | 11 | 2.7 | 7 | 63.6 | 0.67 | 0.18-2.55 | |
| Skin color | | | | | | | |
| White | 39 | 9.4 | 26 | 66.7 | 1 | – | 0.982‡ |
| Non-white | 374 | 90.6 | 250 | 66.8 | 1.01 | 0.50-2.03 | |
| Schooling (years of study) | | | | | | | |
| 0-4 | 13 | 3.1 | 11 | 84.6 | 2.32 | 0.48-11.12 | |
| 5-8 | 101 | 24.5 | 71 | 70.3 | 1 | – | 0.406‡ |
| 9-11 | 259 | 62.7 | 169 | 65.3 | 0.79 | 0.48-1.31 | |
| ≥12 | 40 | 9.7 | 25 | 62.5 | 0.70 | 0.33-1.52 | |
| Occupation | | | | | | | |
| Occupied | 75 | 18.2 | 51 | 68.0 | 1.07 | 0.62-1.82 | 0.812§ |
| Unoccupied | 338 | 81.8 | 225 | 66.6 | 1 | – | |
| Income | | | | | | | |
| Yes | 75 | 18.2 | 51 | 68.0 | 1.07 | 0.62-1.82 | 0.812§ |
| No | 338 | 81.8 | 225 | 66.6 | 1 | – | |
| Marital status | | | | | | | |
| With partner | 355 | 86.0 | 246 | 69.3 | 1 | – | 0.008§ |
| Without partner | 58 | 14.0 | 30 | 51.7 | 0.47 | 0.27-0.83 | |
| Alcohol consumption | | | | | | | |
| Yes | 25 | 6.1 | 19 | 76.0 | 1.61 | 0.63-4.14 | 0.315§ |
| No | 388 | 93.9 | 257 | 66.2 | 1 | – | |
| Tobacco use | | | | | | | |
| Yes | 9 | 2.2 | 7 | 77.8 | 1.76 | 0.36-8.57 | 0.724§ |
| No | 404 | 97.8 | 169 | 66.6 | 1 | – | |
| Use of illicit drugs | | | | | | | |
| Yes | 2 | 0.5 | 2 | 100.0 | – | – | – |
| No | 411 | 99.5 | 274 | 66.7 | – | – | |

**Table 1** – Cont.

| Variables | All | | Breastfeeding in the first hour YES | | COR* | CI95%† | P |
|---|---|---|---|---|---|---|---|
| | n | % | n | % | | | |
| **Intimate Partner** | | | | | | | |
| Age group (years old) (n=406)‖ | | | | | | | |
| 15-19 | 19 | 4.6 | 15 | 78.9 | 1 | – | 0.266§ |
| 20-29 | 188 | 45.5 | 128 | 68.1 | 0.57 | 0.18-1.79 | |
| 30-39 | 146 | 35.4 | 99 | 67.8 | 0.56 | 0.18-1.78 | |
| ≥40 | 53 | 12.8 | 30 | 56.6 | 0.35 | 0.10-1.19 | |
| Skin color (n=409)‖ | | | | | | | |
| White | 82 | 19.9 | 66 | 80.5 | 1 | – | 0.003§ |
| Non-white | 327 | 79.1 | 207 | 63.3 | 0.42 | 0.23-0.76 | |
| Schooling (years of study) (n=355)‖ | | | | | | | |
| 0-4 | 23 | 5.6 | 13 | 56.5 | 1 | – | 0.511§ |
| 5-8 | 98 | 23.7 | 67 | 68.4 | 1.66 | 0.66-4.21 | |
| 9-11 | 207 | 50.1 | 146 | 70.5 | 1.84 | 0.77-4.42 | |
| ≥12 | 27 | 6.5 | 17 | 63.0 | 1.31 | 0.42-4.07 | |
| Occupation (n=411)‖ | | | | | | | |
| Occupied | 335 | 81.1 | 224 | 66.9 | 0.99 | 0.58-1.68 | 0.968§ |
| Unoccupied | 76 | 18.4 | 51 | 67.1 | 1 | – | |
| Family provider (n=411)‖ | | | | | | | |
| Yes | 281 | 68.0 | 189 | 67.3 | 1.05 | 0.67-1.63 | 0.825§ |
| No | 130 | 31.5 | 86 | 66.2 | 1 | – | |
| Alcohol use (n=411)‖ | | | | | | | |
| Yes | 239 | 57.9 | 156 | 65.3 | 0.84 | 0.55-1.27 | 0.405§ |
| No | 172 | 41.6 | 119 | 69.2 | 1 | – | |
| Tobacco use (n=411)‖ | | | | | | | |
| Yes | 61 | 14.8 | 47 | 77.0 | 1.80 | 0.95-3.39 | 0.068§ |
| No | 350 | 84.7 | 228 | 65.1 | 1 | – | |
| Use of illicit drugs (n=407)‖ | | | | | | | |
| Yes | 18 | 4.4 | 14 | 77.8 | 1.80 | 0.58-5.57 | 0.303§ |
| No | 389 | 94.2 | 257 | 66.1 | 1 | – | |

*COR: crude *odds ratio*; †CI95%: 95% confidence interval; ‡Fisher's exact test; §Pearson's chi-square test; ‖Sample excluding missing data.

According to the women's reports, intimate partners had an average age of 30.3 years (±7.7 years). Furthermore, they were non-white (79.1%), had up to 11 years of study (50.1%), had some sort of occupation (81.1%) and were providers for their families (68.0%). More than half consumed alcohol (57.9%) and the majority did not use tobacco (84.7%) or illicit drugs (94.2%). Women who declared having non-white partners were less likely (COR=0.42; CI95% 0.23-0.76) to breastfeed in the first hour (Table 1).

Most interviewees reported that they had breastfed in the first hour after birth (66.8%). It was observed that the majority reported having had more than one pregnancy (62.7%), two or more deliveries (58.6%) and no previous abortion (81.4%). Among those who did not plan their pregnancy (65.1%), the desire for pregnancy was more common (60.0%). There was a predominance of six or more

prenatal care appointments (79.7%), but most women had not received any guidance on breastfeeding (63.4%) or physical activity (55.9%). Just over half of the women did not have a companion during birth (56.9%) or skin-to-skin contact with the newborn (53.0%). The majority underwent cesarean section (61.7%), had a gestational age between 37-40 weeks (63.7%), the newborn's birth weight was between 2,501-4,000 grams (85.0%) and the 5-minute Apgar score was higher or equal to 7 (99.3%). The presence of factors such as companion during labor (COR=1.99; CI95% 1.30-3.06), skin-to-skin contact (COR=2.91; CI95% 1.88-4.50) and natural birth (COR=3.08; CI95% 1.93-4.93) increased the chances of breastfeeding in the first hour of life (Table 2).

**Table 2 –** Association between obstetric variables and breastfeeding in the first hour of life – Teresina, Piauí, 2020-2021. (n=413)

| Variables | All | | Breastfeeding in the first hour YES | | COR* | CI95%† | P |
|---|---|---|---|---|---|---|---|
| | n | % | n | % | | | |
| Number of pregnancies | | | | | | | |
| 1 | 154 | 37.3 | 101 | 65.6 | 1 | – | 0.679‡ |
| >1 | 259 | 62.7 | 71 | 67.6 | 1.09 | 0.72-1.67 | |
| Number of abortions | | | | | | | |
| 0 | 336 | 81.4 | 225 | 67.0 | 0.96 | 0.54-1.72 | 0.897§ |
| 1 | 62 | 15.0 | 42 | 67.7 | 1 | – | |
| 2 | 13 | 3.1 | 8 | 61.5 | 0.76 | 0.22-2.63 | |
| 3 | 2 | 0.5 | 1 | 50.0 | 0.48 | 0.03-8.01 | |
| Number of deliveries | | | | | | | |
| 1 | 171 | 41.4 | 113 | 66.1 | 1.39 | 0.67-2.90 | 0.563‡ |
| 2 | 116 | 28.1 | 80 | 69.0 | 1.59 | 0.74-3.43 | |
| 3 | 74 | 17.9 | 49 | 66.2 | 1.40 | 0.62-3.17 | |
| 4 | 36 | 8.7 | 21 | 58.3 | 1 | – | |
| ≥5 | 16 | 3.9 | 13 | 81.3 | 3.09 | 0.75-12.80 | |
| Planned pregnancy | | | | | | | |
| Yes | 144 | 34.9 | 94 | 65.3 | 0.90 | 0.58-1.38 | 0.624‡ |
| No | 269 | 65.1 | 182 | 67.7 | 1 | – | |
| Feelings regarding unplanned pregnancy (n=269) | | | | | | | |
| Unwanted | 21 | 7.8 | 14 | 66.7 | 1 | – | 0.919‡ |
| Wanted | 248 | 92.2 | 168 | 67.7 | 1.05 | 0.41-2.70 | |
| Number of prenatal care appointments | | | | | | | |
| None | 2 | 0.5 | – | – | | | |
| <6 | 82 | 19.9 | 54 | 65.9 | 1 | – | 0.861‡ |
| >6 | 329 | 79.7 | 220 | 66.9 | 1.05 | 0.63-1.74 | |
| Received guidance on breastfeeding | | | | | | | |
| Yes | 150 | 36.3 | 94 | 62.7 | 0.75 | 0.49-1.15 | 0.183‡ |
| No | 263 | 63.7 | 181 | 69.1 | 1 | – | |
| Received guidance on physical activity | | | | | | | |
| Yes | 231 | 55.9 | 149 | 64.5 | 0.79 | 0.52-1.20 | 0.274‡ |
| No | 182 | 44.1 | 126 | 69.6 | 1 | – | |

**Table 2** – Cont.

| Variables | All | | Breastfeeding in the first hour YES | | COR* | CI95%† | P |
|---|---|---|---|---|---|---|---|
| | n | % | n | % | | | |
| Companion during labor | | | | | | | |
| Yes | 178 | 43.1 | 134 | 75.3 | 1.99 | 1.30-3.06 | 0.001‡ |
| No | 235 | 56.9 | 142 | 60.4 | 1 | – | |
| Skin-to-skin contact with the newborn | | | | | | | |
| Yes | 194 | 47.0 | 153 | 78.9 | 2.91 | 1.88-4.50 | 0.001‡ |
| No | 219 | 53.0 | 123 | 56.2 | 1 | – | |
| Type of delivery | | | | | | | |
| Natural birth | 158 | 38.3 | 128 | 81.0 | 3.08 | 1.93-4.93 | 0.001‡ |
| Cesarean Section | 255 | 61.7 | 148 | 58.0 | 1 | | |
| Gestational age (weeks) | | | | | | | |
| <37 | 37 | 9.0 | 21 | 56.8 | 1 | – | |
| 37-40 | 263 | 63.7 | 177 | 67.3 | 1.57 | 0.78-3.16 | 0.374‡ |
| >40 | 113 | 27.4 | 78 | 69.0 | 1.70 | 0.79-3.64 | |
| Birth weight (grams) | | | | | | | |
| <2000 | – | – | | | | | |
| 2000-2500 | 35 | 8.5 | 20 | 57.1 | 1 | – | 0.342‡ |
| 2501-4000 | 351 | 85.0 | 236 | 67.2 | 1.54 | 0.76-3.12 | |
| >4000 | 27 | 6.5 | 20 | 74.1 | 2.14 | 0.72-6.38 | |
| Gender of the Newborn | | | | | | | |
| Male | 203 | 49.2 | 131 | 64.5 | 0.82 | 0.541-1.23 | 0.330‡ |
| Female | 210 | 50.8 | 145 | 69.0 | 1 | – | |
| 5-Minute Apgar score | | | | | | | |
| <7 | 3 | 0.7 | – | – | – | – | – |
| ≥7 | 410 | 99.3 | 276 | 67.3 | – | – | |
| Breastfeeding in the first hour of life | | | | | | | |
| Yes | 276 | 66.8 | – | – | – | – | – |
| No | 137 | 33.2 | – | – | – | – | |

*COR: crude *odds ratio*; † CI95%: 95% confidence interval; ‡ Pearson's chi-square test; § Fisher's exact test.

Table 3 shows that 3.6% of the respondents reported having experienced intimate partner violence during pregnancy, with reports of physical (1.5%) and psychological (3.6%) violence. There was no information of sexual violence. Prior to pregnancy, the majority reported not having suffered physical (93.0%), psychological (89.3%) or sexual (99.3%) violence. Around one quarter (25.2%) of the women reported having experienced some sort of violence at some point in their lives. There was no significant association between intimate partner violence during pregnancy and breastfeeding in the first hour of life.

**Table 3 –** Association between intimate partner violence during pregnancy/history of violence and breastfeeding in the first hour – Teresina, Piauí, 2020-2021. (n=413)

| Variables | All | | Breastfeeding in the first hour YES | | COR* | CI95%† | p |
|---|---|---|---|---|---|---|---|
| | N | % | n | % | | | |
| Physical violence during pregnancy | | | | | | | |
| Yes | 6 | 1.5 | 4 | 66.7 | 0.99 | 0.18-5.49 | 1.000‡ |
| No | 407 | 98.5 | 272 | 66.8 | 1 | – | |
| Psychological violence during pregnancy | | | | | | | |
| Yes | 15 | 3.6 | 11 | 73.3 | 1.38 | 0.43-4.42 | 0.782§ |
| No | 398 | 96.4 | 265 | 66.6 | 1 | | |
| Sexual violence during pregnancy | | | | | | | |
| Yes | – | – | – | – | – | – | – |
| No | 413 | 100.0 | 276 | 66.8 | – | – | |
| Any sort of violence during pregnancy | | | | | | | |
| Yes | 15 | 3.6 | 11 | 68.8 | 1.09 | 0.37-3.22 | 0.868‡ |
| No | 398 | 96.4 | 265 | 66.8 | 1 | – | |
| Physical violence at some point in life | | | | | | | |
| Yes | 29 | 7.0 | 23 | 79.3 | 1.99 | 0.79-4.99 | 0.139‡ |
| No | 384 | 93.0 | 253 | 65.9 | 1 | – | |
| Sexual violence at some point in life | | | | | | | |
| Yes | 3 | 0.7 | 3 | 100.0 | – | – | – |
| No | 410 | 99.3 | 273 | 66.6 | – | – | |
| Psychological violence at some point in life | | | | | | | |
| Yes | 44 | 10.7 | 33 | 75.0 | 1.56 | 0.76-3.18 | 0.223‡ |
| No | 369 | 89.3 | 243 | 65.9 | 1 | – | |
| Any sort of violence at some point in life | | | | | | | |
| Yes | 104 | 25.2 | 73 | 70.2 | 1.23 | 0.76-1.99 | 0.400‡ |
| No | 309 | 74.8 | 203 | 65.7 | 1 | – | |

*COR: crude *odds ratio*; †CI95%: 95% confidence interval; ‡Pearson's chi-square test; §Fisher's exact test.

In model 1, the variables marital status and partner's race/skin color were associated with the outcome. In model 2, after adjustments, the same variables remained significant. In model 3, women with a companion during labor (AOR=1.66; CI95% 1.34-2.29), natural births (AOR=2.06; CI95% 1.90-4.73) and skin-to-skin contact with the newborn (AOR=2.14; CI95% 1.04-4.38) had a greater chance of breastfeeding in the first hour of life. Among those without partners (AOR=0.47; CI95% 0.25-0.86) and whose partners were not white (AOR=0.45; CI95% 0.24-0.83) there was a lower chance of breastfeeding (Table 4).

**Table 4 –** Hierarchical analysis of the factors associated with breastfeeding in the first hour of life – Teresina, Piauí, 2020-2021. (n=413)

| Variables | Model 1 | | Model 2 | | Model 3 | |
|---|---|---|---|---|---|---|
| | AOR* | CI95%† | AOR* | CI95%† | AOR* | CI95%† |
| Marital status | | | | | | |
| With partner | 1 | | | | | |
| Without partner | 0.50 | 0.28-0,89‡ | | | | |
| Skin color (partner) | | | | | | |
| White | 1 | | | | | |
| Non-white | 0.43 | 0.24-0,78‡ | | | | |
| Tobacco use | | | | | | |
| Yes | 1.79 | 0.94-3.42 | | | | |
| No | 1 | | | | | |
| Physical violence at some point in life | | | | | | |
| Yes | | | 1.93 | 0.75-4.99 | | |
| No | | | 1 | | | |
| Received guidance on breastfeeding | | | | | | |
| Yes | | | | | 0.73 | 0.46-1.15 |
| No | | | | | 1 | |
| Had a companion during labor | | | | | | |
| Yes | | | | | 1.66 | 1.34-2,29‡ |
| No | | | | | 1 | |
| Skin-to-skin contact with the newborn | | | | | | |
| Yes | | | | | 2.14 | 1,04 – 4,38‡ |
| No | | | | | 1 | |
| Type of delivery | | | | | | |
| Natural birth | | | | | 2.06 | 1.90-4,73‡ |
| Cesarean section | | | | | 1 | |

*AOR: adjusted *odds ratio*; †CI95%: 95% confidence interval; ‡p<0,05.

## DISCUSSION

The results showed that more than half of the women reported having breastfed in the first hour of life. According to the World Health Organization, which classifies the prevalence of breastfeeding in the first hour of life as poor (0-29%), fair (30-49%), good (50-89%) and very good (90%-100%)[2], prevalence was considered good in this research. Factors such as the presence of a companion during labor, natural birth and the experience of skin-to-skin contact with the newborn increased the chances of breastfeeding in the first hour. On the other hand, women without a partner and those whose partners had non-white skin were less likely to breastfeed. Understanding these factors that influence the early initiation of breastfeeding is important to contribute to a better management of this practice, since it is well-known that breastfeeding in the first hour of life is a significant marker of exclusive breastfeeding[1,7].

The prevalence of breastfeeding in the first hour of life may vary depending on the location assessed. Very low prevalences (9.1%) were found in China and, even so, there was a greater propensity for exclusive breastfeeding among those who breastfed in the first hour. Part of the explanation may be associated with the fact they reside in rural areas, as a result of the massive

distribution of infant formula to impoverished populations by the government. In other countries, it was shown that breastfeeding in the first hour of life also had a positive influence on the continuation of exclusive breastfeeding for the next three and six months[1,2]. In Brazil, national surveys carried out in 2006 and 2008 showed prevalence rates ranging from 42.9% to 67.7%, respectively[17,18].

In the present research, women who experienced natural births were more likely to breastfeed in the first hour, corroborating data widely found in other countries and in Brazil[7,16,17,19]. In cases of cesarean section surgery, both the anesthetic procedure and the need for postoperative care may delay the contact with the newborn and the early initiation of breastfeeding. On the other hand, in cases of natural birth, there is an expectation that the woman can participate more actively, thus increasing the probability of having contact with the newborn and experiencing early breastfeeding. The prevalence of late initiation of breastfeeding (after one hour of birth) in 58 low- and middle-income countries, between 2012-2017, was 34.5%. In all countries, there was shorter delay in natural births and higher in cesarean sections[20].

Considered a recommended practice for the first hour of a newborn's life, skin-to-skin contact also positively influenced breastfeeding, even though its prevalence was lower than that recommended in this study[2]. Similar results were found in a meta-analysis with data from 2000 to 2017, reiterating that the contact between mother and child shortly after birth has a significant effect that collaborates for the success of the first lactation[21]. Thus, in addition to contributing to the bond between mother and child, skin-to-skin contact can promote an early initiation of breastfeeding by increasing oxytocin levels[8,22]. Routine neonatal care and transfer to the recovery room are well-known interferences that are associated with a shorter duration of skin-to-skin contact than that recommeded[23]. It is known that both the woman's primary social network (people closer to her and more involved) and secondary social network (health professionals) may favor her contact with the newborn after birth and thereby lead to more successful breastfeeding[8,21,24].

Although most women in this study did not have a companion during labor, when they were present there was also a greater chance of breastfeeding in the first hour of life. Factors such as cesarean section surgery and the Covid-19 pandemic may have contributed to the lower prevalence of companions, under the premise that their absence would lower the risk of infection[25]. In other national studies, a greater likelihood of breastfeeding was also observed when a companion was present during labor[19,26]. It is possible that the presence of a companion provides emotional support to the woman, giving her more security in the immediate postpartum and greater ease for being close to someone from her intimate circle. In Brazil, the presence of a companion is already recognized as a strategy to humanize childbirth guaranteed by Law No.11,108/2005, ensuring their presence during labor, delivery and immediate postpartum, and it is up to the woman giving birth to make the choice[27].

Another factor that had an influence on the experience of breastfeeding in the first hour of life was the marital status of the postpartum women, with those without a partner being less likely to breastfeed. There is data showing that single women, but whose partners recognized the paternity of their children, were less likely to breastfeed (50%) compared to married women whose children's paternity was recognized. In turn, those who were single and failed to have paternity recognition for their children were less likely to breastfeed (135%)[28]. Having a stable union and support from other people, especially their partner, has a positive influence on the breastfeeding duration. It is known that social, economic and emotional support is important, but the partner is the person who carries more weight in these different types of support and whose assertive attitude can motivate the woman to breastfeed[2,7].

The partner's skin color was associated with the outcome, since women whose partners had non-white skin were less likely to breastfeed in the first hour. There is no consensus in the literature regarding the association between skin color and breastfeeding. Data from the United States showed

that black children had a lower rate of any type of breastfeeding at three months of age (58%) than white children (72.7%). Exclusive breastfeeding at six months of age was observed in 17.2% of black children and 29.5% of white children. Additionally, black women experienced multiple barriers to breastfeeding, which include lack of knowledge about breastfeeding, absence of a partner, less social and family support, lower level of education, and insufficient support from health services[29]. In turn, in the city of Botucatu, São Paulo, although black and brown women have a lower level of education, a per capita income lower than the minimum wage and are less likely to have a partner, there was a higher chance of breastfeeding until the 12th month[30].

Unlike what has been found in other studies[9–12], no association was observed between breastfeeding in the first hour of life and intimate partner violence during pregnancy, possibly influenced by the low prevalence of the latter. In turn, this fact may be related to the time and place in which the interview took place during this study. It is possible that the hospital environment, associated with the fact that the women were experiencing the immediate postpartum period, a moment when they undergo physiological and hormonal changes, may have contributed to disregard any aggressive behavior from their partner to maintain the relationship after the arrival of their child. Data from other countries highlight the adverse effect of violence during pregnancy on breastfeeding practices, indicating that in these cases there is a smaller chance of initiating breastfeeding and a greater chance of stopping it before six months[10–12]. In addition to increasing the propensity for postpartum depression, violence committed by an intimate partner during pregnancy is indicative of a dysfunctional family pattern, which may limit the social support that is so necessary for breastfeeding[12].

This study has limitations. First, the outcome was assessed by the participant's own report and not by direct observation. Even though we can consider that the memory bias is low since the event happened in the last 24 hours, there may be some inaccuracy on the part of the woman regarding the time interval until the first breastfeed. Second, some variables related to the intimate partner showed missing data. Even so, only complete data were considered for the regression models. Despite the aforementioned limitations, this study is the first to investigate the practice of breastfeeding in the first hour of life in the city of Teresina in which associated factors were assessed, thus being able to contribute to the development of strategies and actions to expand this practice.

## CONCLUSION

It was observed that the prevalence of breastfeeding in the first hour of life was considered good and that obstetric and childbirth care factors showed a positive contribution, thus highlighting the importance of offering quality care in the parturition process. Although no association was found between breastfeeding in the first hour and intimate partner violence during pregnancy, the results are unprecedented for Piauí and may support other future research on this topic. Educational actions and training courses for health professionals are key strategies to improve the care provided and contribute to promoting and supporting the practice of breastfeeding.

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## NOTES

### ORIGIN OF THE ARTICLE
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### CONTRIBUTION OF AUTHORITY
Study design: Viana VAO, Madeiro AP.
Data collection: Viana VAO, Madeiro AP.
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Discussion of the results: Viana VAO, Madeiro AP, Castro LC, Rufino AC.
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### CONFLICT OF INTEREST
There is no conflict of interest.



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