Breastfeeding within one hour of birth among women in the Northeast region of Brazil: prevalence and related factors

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ABSTRACT

Objective: Identify the prevalence and factors associated with breastfeeding within one hour of birth. Method: This is a cross-sectional study conducted between March and July 2018 with 655 postpartum women in Lagarto, Sergipe, Brazil. The chi-square test and prevalence ratios were used in the analysis. Results: Prevalence of breastfeeding within one hour of birth was 45.5%, and higher among women who planned their pregnancy (PR= 1.26; 95%CI 1.06-2.01), received prenatal care in public health centers (PR= 1.34; 95%CI 1.01-2.10), and received guidance about the importance of prenatal care (PR= 1.35; 95%CI 1.08-1.96). Parturition in public health centers (PR= 2.59; 95%CI 1.89-4.38), vaginal delivery (PR= 2.46; 95%CI 1.65-5.04), and skin-to-skin contact (PR= 2.60; 95%CI 2.15-5.10) were associated with breastfeeding. Conclusion: Prevalence of breastfeeding within one hour of birth is below the level recommended by the World Health Organization and associated with variables of pregnancy, parturition and birth.

Descriptors: Breastfeeding; Obstetric Nursing; Postpartum Period; Infant, Newborn; Epidemiologic Studies.

RESUMO

Objetivo: Identificar a prevalência e os fatores associados à amamentação na primeira hora de vida. Método: Estudo transversal realizado entre março e julho de 2018 com 655 puérperas de Lagarto, Sergipe, Brasil. Utilizou-se o Qui-quadrado e Razão de Prevalência. Resultado: A prevalência da amamentação na primeira hora de vida foi de 45,5%, sendo maior entre as mulheres que planejaram a gravidez (RP= 1,26; IC95% 1,06-2,01), realizaram o pré-natal no serviço público (RP= 1,34; IC95% 1,01-2,10) e receberam orientações sobre a sua importância (RP= 1,35; IC95% 1,08-1,96). A parturição no serviço público (RP= 2,59; IC95% 1,89-4,38), o parto vaginal (RP 2,46; IC95% 1,65-5,04) e o contato pele a pele (RP= 2,60; IC95% 2,15-5,10) mostraram-se associados à amamentação. Conclusão: A prevalência da amamentação na primeira hora de vida está aquém das recomendações da Organização Mundial de Saúde e associada a variáveis da gravidez, parturição e nascimento.

Descritores: Aleitamento Materno; Enfermagem Obstétrica; Período Pós-Parto; Recém-Nascido; Estudos Epidemiológicos.
INTRODUCTION

Breastfeeding within one hour of birth is potentially beneficial for all children in all countries, with an important protective effect against neonatal mortality\(^1\). Breastfeeding contributes positively to child growth and development and mother’s physical and psychological health. The benefits for the child include strengthened immune system and prevention of dental malocclusions, in addition to recently reported protection against overweight and diabetes mellitus at older ages. For mothers, breastfeeding prevents breast cancer, increases the interdelivery interval and reduces the risk of developing diabetes and/or ovarian cancer\(^2\).

The World Health Organization (WHO) and the United Nations Children’s Fund (UNICEF) emphasize skin-to-skin contact immediately after birth must be a priority for newborns (NBs), as it facilitates breastfeeding within one hour of birth. This practice promotes bonds between mother and child, warming the NB and enabling the provision of the baby’s first natural form of immunization — the colostrum\(^3\).

In Brazil, the Baby-Friendly Hospital Initiative (BFHI) ensures the practice of breastfeeding, having developed the “10 Steps to Successful Breastfeeding,” contributing to the increase in the prevalence and duration of breastfeeding\(^3\). According to step 4 of this document, health professionals must help mothers initiate breastfeeding within a half-hour of birth\(^4\). Brazilian hospitals participating in the BFHI are estimated to double the chance of a child being breastfed within the first hour of birth, which shows the importance of this initiative for timely initiation of breastfeeding\(^5\).

In this context, nursing education is linked with the care process, also involving breastfeeding guidance strategies. Nurses have a critical role in promoting, protecting and supporting breastfeeding, since they are directly supporting women during the pregnancy-birth period, so prenatal visits are an opportunity to prepare mothers for breastfeeding and highlight the benefits of this practice\(^6\).

Considering the above, variables related to pregnancy and parturition/birth can positively or negatively influence breastfeeding within the first hour of birth, so being aware of these factors is essential. Therefore, this study aimed to identify the prevalence and factors associated with breastfeeding within one hour of birth in a normal-risk maternity hospital in the Northeast region of Brazil.

METHODS

This is a cross-sectional study conducted from March to July 2018 with 655 women in postpartum period, who were assessed through interviews and their prenatal care form during the immediate postpartum period. This study was conducted at a normal-high maternity hospital in Lagarto, Sergipe, Brazil.

Eligible population for the study consisted of 1,250 women based on the estimated annual number of births provided by the hospital management where the study was conducted. Then, the sample was calculated with a 97% confidence level and a 3% sampling error. A 10% margin of safety was also added to the calculated number, resulting in 655 postpartum interviewees.

The postpartum women were selected by simple random sampling, from a daily admission list; all women who had delivered a live baby of any weight or gestational age were considered eligible for this study. The exclusion criteria were women who did not speak and/or understood the Portuguese language and/or who had severe mental disorders.

For data collection, face-to-face interviews were conducted with mothers at least six hours after birth and after reviewing the participant’s prenatal care forms. The study questionnaire addressed variables of prenatal care, delivery and birth.

Associations were estimated between variables related to pregnancy (planned pregnancy, feelings regarding pregnancy, and time perception during pregnancy), prenatal care (early start, number of visits, follow-up by the same professional, type of health center of most prenatal visits, and guidance about the importance of breastfeeding within the first hour of birth) and parturition/birth (type of service for delivery, type of delivery to be performed and skin-to-skin contact right after birth) with breastfeeding within one hour of birth (n=297).

SPSS — Statistical Package for the Social Sciences 20.0 was used for statistical analysis. Univariate and bivariate techniques were applied to obtain the distribution of absolute and relative frequencies. Associations were investigated using the Chi-square test between qualitative/categorical variables. The prevalence ratio (PR) was estimated as a measurement of association and its respective 95% confidence intervals (95%CI). A 5% significance level was adopted for all cases.

This study is linked with Projeto Nascer em Lagarto, SE: Inquérito Municipal sobre Parto e Nascimento, approved in March 2018 by the Research Ethics Committee of the Federal University of Sergipe, under approval nº 2.553.774 and CAAE nº 8246418.0.0000.5546. The researchers observed the guidelines and regulatory standards recommended in Resolution nº 466/12 of the National Health Council regarding research with human beings. Postpartum women signed an informed consent form, ensuring their withdrawal at any moment without any damage.

RESULTS

The prevalence of breastfeeding within the first hour of birth was 45.5%, higher among women who planned their pregnancy (PR= 1.26; 95%CI 1.06-2.01) (Table 1).
A higher prevalence of breastfeeding within the first hour of birth was observed among women who used the public service for prenatal care (PR= 1.34; 95%CI 1.01-2.10) and among women who were instructed during follow-up period about the importance of this practice in the immediate postpartum period (PR= 1.35; 95%CI 1.08-1.96) (Table 2).

Use of public service for parturition (PR= 2.59; 95%CI 1.89-4.38), vaginal delivery (PR= 2.46; 95%CI 1.65-5.04) and skin to skin contact (PR= 2.60; 95%CI 2.10-5.10) were other parturition/birth variables associated with breastfeeding within the first hour of birth (Table 3).

### DISCUSSION

This study demonstrated the prevalence of breastfeeding within the first hour of birth was similar to that of other studies conducted in the Northeast region of Brazil (28.7% and 33.1%) (3,7) and almost the same as that of an international study (43.6%) (8). The WHO considers breastfeeding within the first hour of birth as an indicator of excellence, classifying the percentages of 0 to 29% as “very bad”, 30 to 49% as “bad”, 50 to 89% as “good”, and 90 to 100% as “very good” (9). Therefore, the prevalence found in these studies requires improvements in incentive and implementation of breastfeeding within the first hour of birth, as it is classified as “bad”.

Brazilian authors consider adherence to step 4 of the BFHI a challenge throughout the national territory, especially in the Northeast region where, even with consolidated BFHI, few babies have a chance to be breastfed within the first hour of birth (10). In this context, other factors can also have a positive or negative influence on the success of breastfeeding (11). Some negative factors are inadequate prenatal care, cesarean section, and the fact that the mother and child do not stay in the same room (12).

Also, women who are unaware of the benefits of breastfeeding for child growth and development are more vulnerable to myths regarding the nutritional value of breastfeeding (11), which may result in non-implementation of breastfeeding and/or early weaning. This fact highlights the importance of health education activities to address the}

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**Table 1.** Distribution of pregnancy-related variables associated with breastfeeding within the first hour of birth (n=653). Lagarto, Sergipe, Brazil, 2018.

<table>
<thead>
<tr>
<th>Variables related to pregnancy</th>
<th>Breastfeeding within one hour of birth</th>
<th>p-value</th>
<th>PR (95%CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planned pregnancy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes (n=297)</td>
<td>51.1%</td>
<td>0.011</td>
<td>1.26 (1.06-2.01)</td>
</tr>
<tr>
<td>No (n=356)</td>
<td>41.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feelings regarding pregnancy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfied</td>
<td>46.8%</td>
<td>0.371</td>
<td>1.09 (0.85-1.42)</td>
</tr>
<tr>
<td>More or less/ Dissatisfied</td>
<td>43.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time perception during pregnancy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wanted pregnancy now</td>
<td>49.3%</td>
<td>0.080</td>
<td>1.17 (0.86-1.60)</td>
</tr>
<tr>
<td>Wanted pregnancy later</td>
<td>42.4%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

%: Relative Frequency; PR: Prevalence Ratio; 95%CI: 95% confidence interval.

**Table 2.** Characteristics of prenatal care associated with breastfeeding within the first hour of birth (n=653). Lagarto, Sergipe, Brazil, 2018.

<table>
<thead>
<tr>
<th>Variables related to pre-natal care</th>
<th>Breastfeeding within one hour of birth</th>
<th>p-value</th>
<th>PR (95%CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early start</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes (n=297)</td>
<td>44.7%</td>
<td>0.545</td>
<td>0.93 (0.90-1.52)</td>
</tr>
<tr>
<td>No (n=356)</td>
<td>47.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of visits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 or more visits</td>
<td>44.7%</td>
<td>0.0408</td>
<td>0.90 (0.89-1.49)</td>
</tr>
<tr>
<td>≤5 visits</td>
<td>48.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Followed up by the same professional</td>
<td></td>
<td>0.675</td>
<td>1.04 (0.71-1.37)</td>
</tr>
<tr>
<td>Yes</td>
<td>46%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>44.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of health center of most visits</td>
<td></td>
<td>0.048</td>
<td>1.34 (1.01-2.10)</td>
</tr>
<tr>
<td>Public</td>
<td>47%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private</td>
<td>35.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guidance about the importance of breastfeeding within one hour of birth</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>50.3%</td>
<td>0.003</td>
<td>1.35 (1.08-1.96)</td>
</tr>
<tr>
<td>No</td>
<td>38.1%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

%: Relative Frequency; PR: Prevalence Ratio; 95%CI: 95% confidence interval.
who received guidance about breastfeeding during pregnancy adhering to these recommendations in the immediate postpartum period\textsuperscript{(15)}. In this sense, authors emphasize that health professionals must have advising skills to support mothers and/or fathers and training about breastfeeding strategies, to ensure effective guidance and mothers feeling confident to implement and overcome possible challenges that may arise in the breastfeeding process\textsuperscript{(16)}.

When analyzing the associations between the variables of parturition/birth and breastfeeding within the first hour of birth, delivery in public health centers is positively related to breastfeeding. This result is consistent with the findings of another Brazilian study\textsuperscript{(7)}. This positive effect is attributed to national public policies focused on maternal and child health and the fact that, in the case of private services, a higher number of elective cesarean sections may occur, which is a negative factor for early skin-to-skin contact and, consequently, for breastfeeding\textsuperscript{(10)}.

Regarding the type of delivery, vaginal delivery was associated with breastfeeding, in agreement with another Brazilian study conducted in Rio Grande do Sul, in which 80% of women who had a vaginal delivery breastfed their babies in the delivery room\textsuperscript{(17)}. This finding can be explained by the fact that vaginal delivery favors a direct contact between mother and child in the first moments after birth, while a cesarean section involves the effect of anesthesia, making breastfeeding difficult within the first hour of birth.

Finally, early skin-to-skin contact contributed to a higher prevalence of breastfeeding within the first hour of birth among the interviewees. Skin-to-skin contact triggers positive psychological and physical effects thanks to the establishment of a bond between mother and child, stimulating the child’s search for the breast and sucking reflexes, which, consequently, contribute to milk extraction\textsuperscript{(18)}.

CONCLUSION

The prevalence of breastfeeding within the first hour of birth is quantitatively below the standards established by the WHO, with associations with factors related to pregnancy, parturition and delivery, evidenced with the implementation of this practice right after birth.

The factors associated with breastfeeding within the first hour of birth were: planned pregnancy; use of the public health center for prenatal care and parturition; receiving, in the prenatal period, guidance about the importance of breastfeeding within the first hour of birth; implementation of skin-to-skin contact right after birth; and vaginal delivery. Health professionals — particularly nurses and/or physicians providing prenatal care — who are aware of these factors can support pregnant women in their preparation process for breastfeeding right after birth.

\begin{table}[h]
\centering
\caption{Distribution of variables related to parturition and birth associated with breastfeeding within the first hour of birth (n=653). Lagarto, Sergipe, Brazil, 2018.}
\begin{tabular}{|l|c|c|c|c|}
\hline
\textbf{Variables related to parturition/birth} & \textbf{Breastfeeding within one hour of birth} & \textbf{p-value} & \textbf{PR (95%CI)} \\
\hline
\textbf{Type of health center for birth} & & & \\
Public & 489 & 511 & <0.001 & 2.59 (1.89-4.38) \\
Private & 20 & 80 & & \\
\hline
\textbf{Type of delivery} & & & \\
Vaginal & 60.2 & 39.8 & <0.001 & 2.46 (1.65-5.04) \\
Cesarean section & 26 & 74 & & \\
\hline
\textbf{Skin-to-skin contact right after birth} & & & \\
Yes & 54.4 & 45.6 & <0.001 & 2.60 (2.10-5.10) \\
No & 22.3 & 77.7 & & \\
\hline
\end{tabular}
\end{table}

 aspects of breastfeeding performed by health professionals, particularly those who provide prenatal care, whether in public and/or private centers in the country.

According to the literature, pregnancy planning favors breastfeeding within the first hour of birth, with the intention to be pregnant as one positive factor for early initiation of breastfeeding\textsuperscript{(13)}. Planned pregnancy involves an even more favorable context in mother’s preparation for breastfeeding, which may eventually contribute to its implementation right after birth. Mother’s intention to breastfeed is also influenced by the number of pregnancies, education level and maternal age, prior experience with breastfeeding, and living with a partner\textsuperscript{(14)}.

Prenatal care in public health centers was also associated with breastfeeding. The support from National Policies for Comprehensive Health Care for Women and Children in primary care, such as Rede Cegonha and the Prenatal and Birth Humanization Program, promote better breastfeeding indicators in Brazil. These actions show the effectiveness of breastfeeding initiatives linked with the Brazilian National Health System.

Pregnant women receiving guidance in prenatal care about the importance of breastfeeding within the first hour of birth presented a higher percentage of breastfeeding right after the baby was born. This finding was consistent with a study conducted in Paraná, which found 58.3% of women.
In this sense, special attention must be dedicated to guidelines about breastfeeding during prenatal care, whether in public and/or private health centers in the country. Such health education activities must have accessible language for women and their companions, positively reducing non-implementation of breastfeeding in the immediate postpartum period and/or early weaning.

A potential study limitation refers to the fact that data were obtained only from interviewed mothers and their prenatal care form, without confirmation of actual implementation obtained only from interviewed mothers and their prenatal postpartum period and/or early weaning.

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