



 Dixis Figueroa Pedraza^{1,2}

¹Universidade Estadual da Paraíba, Programa de Pós-Graduação em Saúde Pública. Campina Grande, PB, Brasil.

²Rede Nordeste de Formação em Saúde de Família, Mestrado Profissional em Saúde da Família. Natal, RN, Brasil.

Correspondence

Dixis Figueroa Pedraza
dixisfigueroa@gmail.com

Duration of breastfeeding and its association with maternal characteristics and counseling for the promotion of breastfeeding received in primary family health care units in a town in the Brazilian Northeast

Duração do aleitamento materno e sua associação com características maternas e orientações sobre incentivo à amamentação recebidas no pré-natal em unidades básicas de Saúde da Família de um município do Nordeste brasileiro

Abstract

Objective: To estimate the breastfeeding time among children cared for at the public health network and to check differences according to maternal characteristics and prenatal care (number of consultations and professional orientations), whose data were retrospectively collected in 2011. **Methods:** Cross-sectional research performed in 16 Primary Family Health Care Units with 204 children born in 2009, which took place in a town in the Brazilian Northeast. The collection was conducted retrospectively in 2011, by applying a questionnaire to the mothers of the children. We used survival analysis to estimate the average length of exclusive and total breastfeeding. Total breastfeeding time was assessed through the Wilcoxon test considering household location, maternal age, maternal marital status, parity, number of prenatal consultations and professional orientations on breastfeeding during prenatal. **Results:** The average times of exclusive and total breastfeeding were five and nine months, respectively. Breastfeeding was less prolonged among younger and primiparous mothers living in

the urban area and that accomplished less than six prenatal consultations. Mothers who received orientations on the importance of breastfeeding up to two years of age or over and about the harms caused by pacifier or nipple use presented higher averages of total breastfeeding time. **Conclusion:** Estimations highlight exclusive and total breastfeeding times below expectations, where length is influenced by maternal characteristics and prenatal adequacy in the number of consultations and orientations on breastfeeding.

Keywords: Breast Feeding. Primary Health Care. Family Health Strateg. Prenatal Care. Health Promotion

Resumo

Objetivo: Estimar o tempo de aleitamento materno entre crianças atendidas na rede pública de saúde e verificar diferenças segundo características maternas e da atenção pré-natal (número de consultas e orientações profissionais). **Métodos:** Pesquisa transversal realizada em 16 unidades básicas de Saúde da Família com 204 crianças nascidas em 2009, em um município do Nordeste brasileiro. A coleta de dados ocorreu de forma retrospectiva em 2011, por aplicação de questionário às mães das crianças. Utilizou-se a análise de sobrevivência para estimar a duração mediana de aleitamento materno exclusivo e total. O tempo total de amamentação foi testado por meio do teste de Wilcoxon considerando localização do domicílio, idade materna, situação conjugal materna, paridade, número de consultas no pré-natal e orientações profissionais sobre amamentação durante o pré-natal. **Resultados:** O tempo mediano de aleitamento materno exclusivo e total foi de cinco e nove meses, respectivamente. A amamentação foi menos prolongada entre as mães mais novas, primíparas, residentes na zona urbana e que realizaram menos de seis consultas de pré-natal. As mães que receberam orientações sobre a importância de amamentar até os dois anos de idade ou mais e sobre os prejuízos do uso de chupeta ou bico apresentaram maiores medianas de tempo de aleitamento materno total. **Conclusão:** As estimativas destacam tempos de aleitamento materno exclusivo e total aquém do esperado, sendo a duração influenciada por características maternas e pela adequação do pré-natal no número de consultas e nas orientações sobre amamentação.

Palavras-chave: Aleitamento Materno. Atenção Primária à Saúde. Estratégia Saúde da Família. Cuidado Pré-Natal. Promoção da Saúde

INTRODUCTION

Breastfeeding effectively contributes to the proper growth and development of the child; strengthens the immune system, prevents malnutrition, infectious diseases and allergies, facilitates cognition, strengthens bonding, affection and mother-child protection and protects also child's health in the future. Breastfeeding includes maternal benefits such as lower likelihood of developing breast and ovarian cancer, protection against diabetes, favoring postpartum weight loss and a faster uterine involution. Breastfeeding does not represent a financial cost to families and is the largest and most economical intervention to reduce child morbidity and mortality, positively impacting the health indicators of the whole society.¹⁻⁵

The World Health Organization (WHO) recommends the practice of exclusive breastfeeding (EBF) during the first six months of life and the maintenance of breastfeeding associated with complementary foods until the second year of life or more. Indicators such as EBF, predominant breastfeeding, supplemented breastfeeding and total breastfeeding (TBF) are recommended as indicators of assessment of eating practices in the first years of life.⁶

The most recent data on breastfeeding in Brazil are from the II Breastfeeding Prevalence Survey (BFPS) in the Brazilian capitals and federal district, in 2009, which described prevalence rates of 41.0% of EBF in children under six months old and 58.7% of breastfeeding in the age group from 9 to 12 months. In the Northeast, these rates were 37.0% and 59.1%, respectively.⁷

In order to achieve a successful beginning and maintenance of breastfeeding, women need active support throughout the puerperal pregnancy cycle. All health professionals should be committed to breastfeeding promotion, providing appropriate information and developing skills for its practice.⁸ The primary health care stands out for being primarily responsible for pre- and postpartum care, and is indispensable for the promotion, protection and support of breastfeeding.⁹ Information and support related to breastfeeding offered to pregnant women during prenatal care, helps women to understand all aspects of breastfeeding, strengthens both maternal confidence and the ability to breastfeed, and has a positive effect on the behaviors of women who are breastfeeding. These interventions may have positive implications on the start, exclusivity and duration of breastfeeding.⁹⁻¹¹

With a view to improving indicators related to breastfeeding and seeking to explore the primary level of support for this practice, municipalities in the state of Rio de Janeiro have, since 1999, adopted the Breastfeeding Friendly Basic Unit initiative. This proposes the implementation of "Ten Steps for Successful Breastfeeding", generating favorable outcomes for the practice of EBF.¹² In order to facilitate a breastfeeding friendly health unit, the steps include professionals training and guidance focused on breastfeeding.¹³ Appropriate clinical management of

breastfeeding by health professionals is considered to be an important and decisive factor in breastfeeding practices.^{3,9} Studies conducted in Brazil focusing on factors related to breastfeeding duration are still few, especially considering the behaviors adopted by primary care professionals during prenatal care.¹⁴ Understanding these factors may support the process of developing programs and actions to promote breastfeeding.⁵

The present study aimed to estimate the duration of breastfeeding among children born in 2009, who were attended at the public health care network and to verify differences according to maternal characteristics and prenatal care (number of consultations and professional guidance).

METHODS

Analytical cross-sectional study conducted from July to August 2011, in the municipality of Queimadas, Paraíba, in the 16 Family Health Units (FHU) of the municipality, of which 11 are rural and five urban and represent 100% coverage of the population. These health units are responsible for providing prenatal care to low-risk pregnant women.

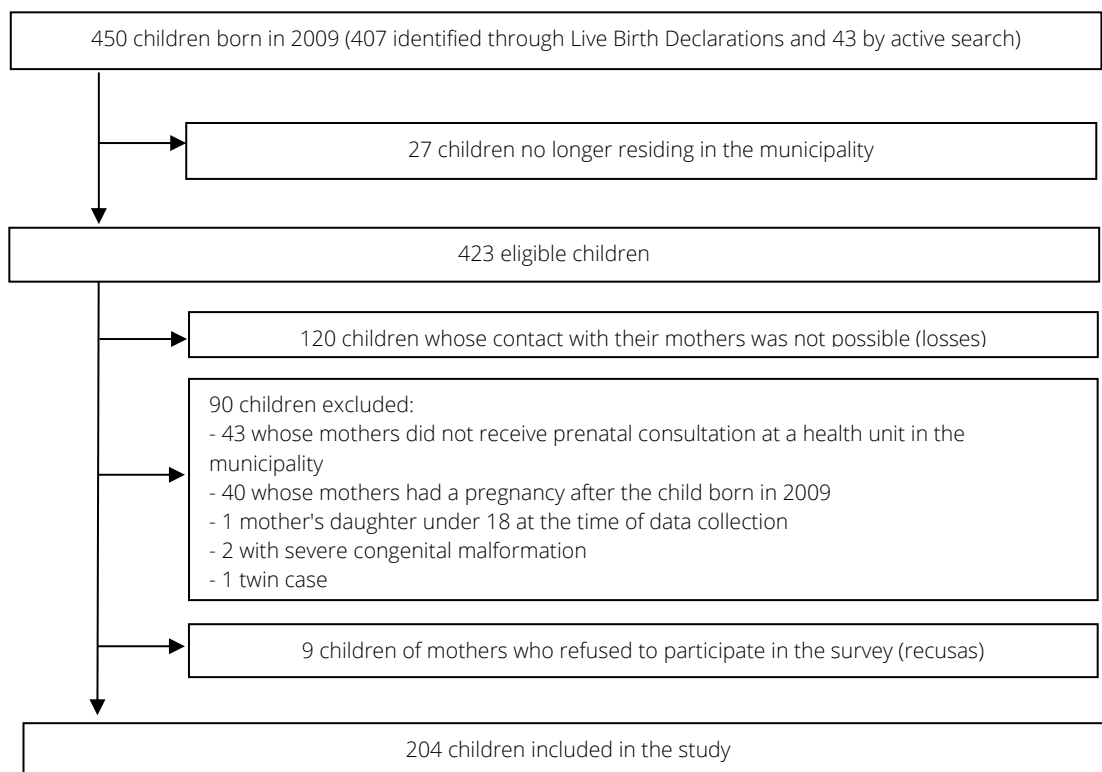
All children born in 2009 and living in the municipality of Queimadas, Paraíba, aged between 18 and 30 months old at the time of data collection were considered eligible for the study. Children whose mothers were not able to be contacted were considered losses. Children whose mothers did not receive prenatal consultation at the FHU of the municipality, children whose mothers became pregnant after their child was born in 2009, children whose mothers were under 18 years old at the time of data collection, children with congenital malformations, twins and death cases were excluded (Figure 1).

The information was collected at the FHU and/or at home by health professionals and students properly trained, who were supervised. Also, they were provided with an instruction manual. The pilot study was conducted with a population similar to the study in another municipality of the same state.

The data collection instrument consisted of a pre-coded questionnaire with closed questions containing information related to household location (rural, urban), maternal age (≥ 20 years, 18-19 years), maternal marital status (with partner, no partner), parity (1 child, 2 or more children) and number of prenatal consultations (≥ 6 , <6). Mothers were also asked about receiving breastfeeding promotion guidelines by health professionals during prenatal consultations, namely: i) the importance of starting breastfeeding in the first hour of life; ii) how to solve difficulties regarding breastfeeding; (iii) appropriate positioning of the child and mother for breastfeeding; iv) how to pump breast milk; v) importance of breastfeeding for two years or

longer; vi) importance of breastfeeding whenever the child wants it to; vii) negative aspects of using bottles; and viii) damage from the use of pacifiers or silicone nipples.

Figure 1. Study population selection flowchart to describe breastfeeding among children 18-30 month old. Queimadas, Paraíba, 2011 (N=204).



The definitions of breastfeeding adopted by the WHO were used.⁶ To define the duration of EBF was considered the period in which the child was receiving only breast milk, directly from the breast or milked, or human milk from another source, without other liquids or solids, except for drops or syrups containing vitamins, oral rehydration salts, mineral supplements or medicines. The breastfeeding time was calculated considering the period in which the child received breast milk (direct from the breast or milked), regardless of whether or not other foods were received.⁶

Data were entered using Excel 2010, with double-entry questionnaires, for comparison and detection of possible errors. The validate app of Epi-Info program was used to verify data consistency.

Survival analysis using the actuarial method was applied to estimate the median duration of breastfeeding practices, considering at least one day of breastfeeding for all children in the study. For the graphical presentation, the monthly median differentials of breastfeeding practices resulting from the survival analysis were used.

Shapiro Wilk test was used to test the assumption of normality of variables. The Wilcoxon test was used to analyze differences in the duration of total breastfeeding, according to the studied explanatory variables (home location, maternal age, maternal marital status, parity, number of prenatal consultations, professional actions to promote breastfeeding during prenatal care). Statistical analyses were performed using the R v2.10.0 statistical program, adopting a significance level of 5%.

The research project was approved by the Research Ethics Committee of Universidade Estadual da Paraíba (Paraíba State University), CAAE 0170.0.133.000-11.

RESULTS

The survival curves of the different breastfeeding practices in the 204 children of the study (Figure 2) showed a decline in the initial segments, with a high weaning rate since the first months of life and a reduction in the exclusive breastfeeding offer. The median time of EBF and TBF was five and nine months, respectively. At the age of six months, 56.9% of the children were still breastfeeding, and in the same period, the percentage of children on EBF was 10.0%. At 24 months, 20.0% of the children were still being breastfed.

Figure 2. Breastfeeding time (total and exclusive) and proportion among children 18-30 months old. Queimadas, Paraíba, 2011 (N=204).

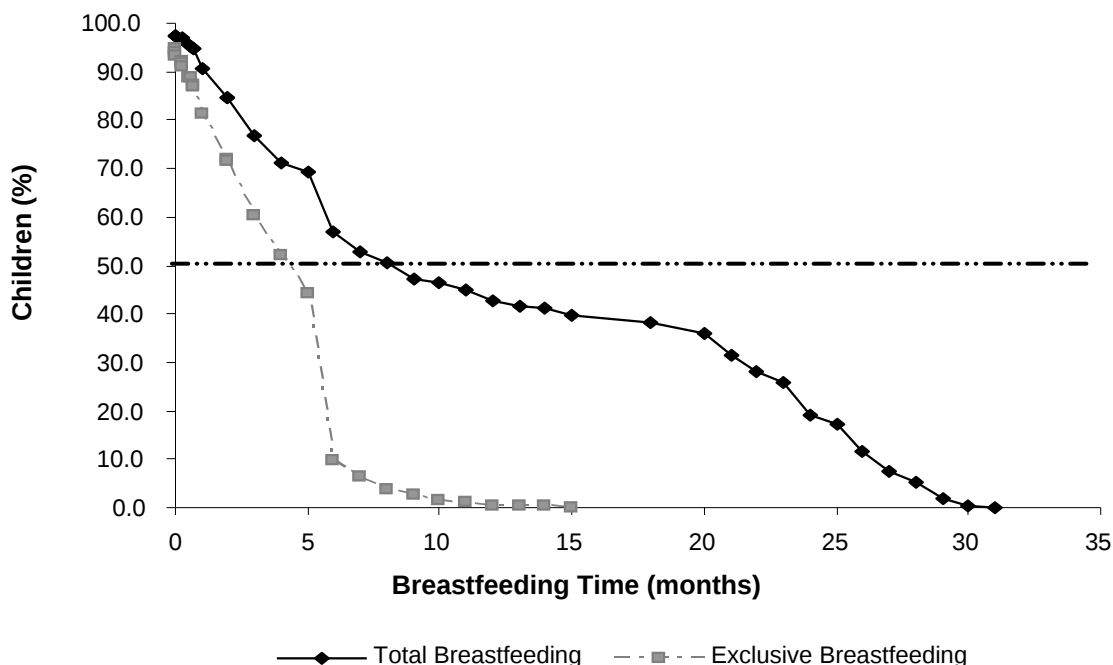


Table 1 presents the differences in the medians of TBF times according to independent variables. In the sample, 61.8% of households were located in rural areas, 94.1% of mothers were adults, 80.9% lived with a partner, 56.9% gave birth to two or more children and 69.1% attended six or more prenatal consultations. The duration of TBF was longer among children living in rural areas. In the rural areas, the mothers were 20 years old or older, had more than one child, and attended six or more prenatal consultations compared to those of urban areas, where mother were under 20 years old, who had just one child, and who during pregnancy attended less than six prenatal consultations, respectively.

Table 1. Total breastfeeding among children 18-30 months old according to maternal sociodemographic characteristics. Queimadas, Paraíba, 2011 (N=204).

Variables	n	%	Median of TB (months)	p-value
Home location				0.010
Urban	78	38.2	8.0	
Rural	126	61.8	9.5	

Table 1. Total breastfeeding among children 18-30 months old according to maternal sociodemographic characteristics. Queimadas, Paraíba, 2011 (N=204). (continues)

Variables	n	%	Median of TB (months)	p-value
Maternal age (years)				0.001
≥ 20	192	94.1	8.5	
18 to 19	12	5.9	6.0	
Maternal marital status				0.584
With companion	165	80.9	9.0	
Without companion	39	18.1	7.5	
Parity				<0.001
1 son	88	43.1	6.0	
2 or more children	116	56.9	14.5	
Number of prenatal consultations				0.030
≥ 6	141	69.1	11.0	
< 6	63	30.9	7.0	

TB – total breastfeeding.

According to the maternal report, the guidelines less practiced by health professionals were on how to solve difficulties with breastfeeding (34.3%) and how to pump breast milk (37.3%). Mothers who reported having received guidance on the importance of breastfeeding at least for two years or more ($p = 0.004$) and on the damages caused by the use of pacifiers or silicone nipples ($p = 0.041$) showed higher median time to TBF than those who reported not having received such guidelines (table 2).

Table 2. Total breastfeeding among children 18-30 months old according to breastfeeding counseling given by professionals during prenatal. Queimadas, Paraíba, 2011 (N=204).

Orientations	n	%	Median of TB (months)	p-value
About the importance of starting breastfeeding in the first hour of life				0.680
Yes	175	85.8	8.5	
Not	29	14.2	9.0	
About how to resolve breastfeeding difficulties				0.216
Yes	134	65.7	9.0	
Not	70	34.3	8.0	
About proper child and mother positions for breastfeeding				0.344
Yes	145	71.1	8.0	
Not	59	28.9	9.0	
About how remove breast milk				0.097
Yes	128	62.7	8.0	
Not	76	37.3	9.0	

Table 2. Total breastfeeding among children 18-30 months old according to breastfeeding counseling given by professionals during prenatal. Queimadas, Paraíba, 2011 (N=204). (continues)

Orientations	n	%	Median of TB (months)	p-value
About the importance of exclusive breastfeeding during the first six months of life and the maintenance of breastfeeding until two years of age or older				0.004
Yes	139	68.1	10.0	
Not	65	31.9	6.0	
About the importance of breastfeeding whenever the child wants				0.185
Yes	139	68.1	8.0	
Not	65	31.9	9.0	
About the harms of bottle feeding				0.126
Yes	150	73.5	9.0	
Not	54	26.5	6.5	
About the harms of using a pacifier or nipple				0.041
Yes	149	73.0	9.0	
Not	55	27.0	6.0	

TB – total breastfeeding.

DISCUSSION

The median time of EBF in the present study (5 months) was higher than the time found in the National Child and Women's Demographic and Health Survey (NDHS) 2006 (2.2 months)¹⁵ and the PPAM 2009, both in relation to the national data (1.8 months) and compared to the Northeast Region (1.16 months).⁷ Given the context evidenced in these^{7,15} and other studies,¹⁶⁻¹⁸ it is considered that the time of EBF in the city of Queimadas was a favorable result.

The median TBF was nine months, which is similar to the one evidenced nationwide in 2006 (9.1 months)¹⁵ and lower than the median observed in 2009 for all Brazilian capitals and the federal district (11.2 months) and for the northeast region (11.4 months).⁷ Considering the ability to contribute to the promotion of breastfeeding, we emphasize the need for mothers to be continuously supported after discharge from the Family Health Strategy (FHS), together with the effective performance of community health agents.^{9,16,19} Studies in Brazil^{3,18,20,21} have shown divergent TBF medians, with values greater than 365 days in some places^{3,20} and lower in others.^{18,21} The diversity observed in TBF time suggests the importance of encouraging local situational diagnostics, in order to support the planning of appropriate interventions.

Some factors showed differences in the time of TBF of the studied children, such as maternal age from 18 to 19 years and primiparity. These results are similar to previous studies,

which showed a higher probability of interruption of breastfeeding in younger mothers^{10,17,21,22} and among those who were giving birth to their first child.^{4,23} Similarly, the influence of maternal age and parity on EBF duration was verified in a systematic literature review.²⁴ Longer breastfeeding time among older women may be related to knowledge and experience regarding breastfeeding.¹⁰ The lower frequency of breastfeeding in primiparous mothers may be related to the association of previous experience with breastfeeding with longer duration of it and EBF,^{4,13} which reinforces the importance of supporting women who have not yet breastfed or who have breastfed for a short time in the case of previous children.¹³

Despite the reduction in differences in the prevalence of breastfeeding between urban and rural areas in Brazil,²⁵ the data from the present study showed, similarly to another one,²⁰ that mothers living in rural areas have a higher median total breastfeeding compared to those living in the urban area. It is possible that in rural areas there is still preservation of cultural patterns that keep more flexible out-of-home work routines, and persistence of traditional family support structures and less vigorous modernization pressures, which may facilitate the maintenance of breastfeeding.²⁵

Prenatal care was of great importance for breastfeeding success, with longer duration among mothers who had six or more consultations, which corroborates previous findings also in the northeast of Brazil.^{5,18} In a nationwide Canadian study, it was found that prenatal care provided by a family doctor or a midwife has a positive impact on the mother's behavior regarding breastfeeding.¹¹ The shorter breastfeeding time among women with fewer prenatal visits may be related to less access to breastfeeding information.²⁶

Although the success of breastfeeding is not merely related to access to information, as breastfeeding practices are affected by a wide range of historical, socioeconomic, cultural and individual factors including maternal characteristics (age, occupation, education, parity, type of delivery), family income and area of residence,^{2,26} the present study confirmed that the adoption of guidelines related to breastfeeding (on the importance of breastfeeding up to two years old and more and the harm caused by the use of a pacifier or silicone nipple) may contribute positively to breastfeeding time. These results converge with those of other national and international studies, which identified a positive association of breastfeeding with the adoption of practices for its promotion in the primary health care,^{8,9,13,27-29} especially when performed by trained professionals,^{8,9,30,31} reinforcing the assumptions that attest the importance of investments in them.²⁶ The small amount of studies on the effect of such orientations developed in primary care²⁷ makes the results found relevant.

One of the factors that marked differences in breastfeeding time is the guidance on the importance of breastfeeding during the first six months of life and the maintenance of breastfeeding until two years old or more. This is consistent with the findings of a literature review in which the encouragement of breastfeeding by health professionals was highlighted among the most relevant factors in the practice of breastfeeding, influencing women's knowledge, confidence and safety at breastfeeding. Still, the authors pointed out to the use of pacifiers as an important responsible for early weaning,³² being equally in tune with the influence of this habit on the duration of TBF reported in the current study. Thus, it is essential to inform mothers about the harms of pacifier use in the frequency of breastfeeding and, therefore, in milk production.^{24,32} Maternal perception of the importance of health professionals in encouraging and promoting breastfeeding, adds greater value to their active participation, as a way to empower women and to adhere to appropriate breastfeeding practices.³³

When analyzing the results of the current study, the biases of cross-sectional studies have to be considered, especially the impossibility of establishing causality and treating breastfeeding with the act of remembering information that may lead to memory errors of the interviewee. However, the age group studied in the present investigation, mothers, whose children of the last pregnancy were at most two and a half years old, can minimize maternal recall bias. In addition, the training of interviewers and the use of an instruction manual, promote communication skills and empathy that are fundamental for controlling possible memory biases associated with retrospective issues. On the other hand, data on breastfeeding duration were analyzed using the survival analysis technique, which allows a longitudinal estimate with cross-sectional data.

Additionally, the limitations of the present study should consider that its accomplishment for a year and including pregnant women of just one municipality makes it impossible to extrapolate the results to the Brazilian reality. Moreover, the losses, although referred to the eligible / total population, result in restrictions related to the validity of the results. It should be also considered that, to evaluate the effect of the guidance given by health professionals, it would be necessary to use a control group. Despite the limitations, the findings make a significant contribution by showing the benefits in breastfeeding and simple breastfeeding support practices during prenatal care.

CONCLUSION

The duration of exclusive and total breastfeeding is shorter than expected, the latter being influenced by maternal characteristics (area of residence, maternal age, number of children), the number of prenatal consultations and the receipt of guidance on breastfeeding. In order to

expand these practices, health professionals should be given priority over the importance of breastfeeding and the development of initiatives that support breastfeeding during prenatal care, such as the Breastfeeding Friendly Unit.

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Conflict of interest: the authors declare no conflict of interest.

Received: June 05, 2019

Reviewed: July 17, 2019

Accepted: August 28, 2019