

Factors that prevent prolonged breastfeeding in Basic Health Units in Guarulhos

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Abstract

Prolonged breastfeeding promotes several health benefits for the child, as well as for the mother, family, and society. Given this and the scarcity of studies on the aspects involved in the practice of breastfeeding after the sixth month of life, the present study aimed to discover the factors that make it difficult to maintain breastfeeding (from six months to two years or more). This was a cross-sectional study, carried out in four randomly selected basic health units located in the city of Guarulhos. The sample consisted of mothers and employees of the basic health units in question, with children aged between six and twenty-four months old. For data collection, two informative questionnaires with the study variables were used. Simple and multiple regression analyses were used to investigate associations between variables. The use of a bottle and a pacifier were important factors for the interruption of prolonged breastfeeding. However, in the adjusted analysis, maternal age predisposes them to interrupt of prolonged breastfeeding. According to the multiple logistic regression model, the use of a pacifier increases the chance of not maintaining prolonged breastfeeding by almost 20-fold, and children who use a bottle have this chance increased by six-fold. It is concluded that the child aging, bottle use, and pacifier use were decisive factors for not maintaining prolonged breastfeeding. Returning to work and storing breast milk were identified as the main difficulties in maintaining breastfeeding.

Palavras-chave: Breastfeeding. Maternal Nutrition. Pacifier. Feeding bottle.

INTRODUCTION

Breast milk is produced to satisfy an infant's nutritional needs in a beneficial way, regardless of race, social, or economic status. According to the Ministry of Health, exclusive breastfeeding (until the sixth month of life) is the unique strategy that most prevents child deaths, in addition to promoting the physical, mental, and psychological health of children

and women who breastfeed¹. Beginning from the sixth month of life, supplementing breast milk with other foods, for up to two years or more (called prolonged breastfeeding), is extremely important for the child's physical and emotional health, preventing them from diseases that cause nutritional disorders and create a very special bond between mother

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and child².

Despite so many advantages and the World Health Organization's (WHO) declaration that breastfeeding for two years to reduce infant mortality in the world³⁻⁴, national epidemiological surveys estimate that 61% of children are weaned early, that is, before 90 days⁵⁻⁶.

The WHO and the Ministry of Health suggest exclusive breastfeeding for six months and encourage its continuation with the inclusion of new foods for two years or more. This justification is fundamental and has a broad significance, since, in the second year of life, breast milk remains an important source of nutrients and protects against infectious diseases⁷⁻⁸.

Breastfeeding and the extent of its practice

depend on factors that can positively or negatively influence its success. Some are directly related to the mother, while others refer to the child and the environment, such as birth conditions and the postpartum period, as well as circumstantial and social factors, such as maternal work and usual living conditions⁹.

In view of these benefits presented concerning the continuity of breastfeeding for the mother-child binomial, as well as for the family and society, studies are scarce on the aspects involved in the practice of breastfeeding after the sixth month of life. This study aims to understand the factors that make it difficult to maintain prolonged breastfeeding (up to two years or more) among Primary Care Center (PCC) users in the city of Guarulhos.

METHODS

This is a cross-sectional study, carried out in four PCCs in the city of Guarulhos, included in the Family Health Strategy, from October 2017 to January 2018. Four PCCs were randomly selected since the city is divided into four intra-municipal health regions. The municipality has a total of 68 PCCs available in its territory, and 47 of these centers are part of the Family Health Strategy.

This study was approved by the Commission for Evaluation and Monitoring of Projects and Research (CAAP) of the city of Guarulhos, which authorized data collection in the PCC, as well as by the Research Ethics Committee of the São Camilo University Center, with an opinion number 2.235.762.

A total of 796 working mothers and users of the PCC, who had children aged between 6 and 24 months, were invited, and 125 mothers agreed to participate in the study, fully answering the research instruments. In

the interview with the participating mothers, if they were multiparous, data were collected from all the children, but only data referring to the last pregnancy and respective lactation were presented (form attached in the supplementary material).

Mothers who were PCC users and workers with children from six months to twenty-four months of age were eligible for the study, characterizing these as inclusion criteria.

There were no exclusion criteria. All participants were invited by the researcher or by the PCC Community Health Agent.

For data collection, two semi-structured questionnaires were used, with closed and open questions, described in detail below. In the previous elaboration of the questionnaires, some professionals were asked to evaluate the content covered. After suggestions made by professionals, some questions were put in a more didactic and practical format for

application, understanding, and interpretation by the study participants. A pre-test was carried out in order to calibrate the instruments, but the data collected were not included in this sample.

One of the questionnaires contained 12 questions about sociodemographic data. The variables of interest were: name initials, age, marital status, education (including that of the father), occupation, housing, family income, region of the municipality where they lived, number of people in the household, family support, number of children, and use of medication. The family's monthly income was obtained by the sum total of the income values of all household residents who contributed to the income, and the total value obtained was divided by the number of household residents. The value adopted in this study for minimum wage was that which was in force at the time the data was collected, in 2017, according to the Inter-Union Department of Statistics and Socioeconomic Studies (DIEESE) of R\$937.00. The other questionnaire with 19 questions about the breastfeeding of the child was for knowing the factors associated with breastfeeding, which are: pregnancy planning, maternal and paternal acceptance of pregnancy, prenatal care, the practice and breastfeeding offered, sex, age, and type of childbirth, pre- and postpartum guidance, use of a bottle and/or pacifier, participation in lectures or support groups on breastfeeding, difficulty and doubts concerning breastfeeding

RESULTS

The average age found of the lactating women was 27.4 years old (SD 6.89 years), ranging between 16 and 43 years old, and the majority reported being married as their marital status, had completed high school, had a family income between 2-3 minimum wages, and did not work outside the home

technique, "weak", "strong", "thin" milk, knowledge about breastfeeding, the importance of human milk for the child.

Questionnaires were administered through verbal interviews (questions) by the main researcher in a private room, after explanations, taking care not to induce responses, with an average time of 10 minutes for each questionnaire.

The collected data were analyzed and grouped according to the similarities of the categories with the elaboration of the absolute and percentage frequencies and, later, presented through tables or graphs.

Statistical analysis

Descriptive statistics were used with measurements of central tendency (mean and median) and dispersion (standard deviation -SD), minimum and maximum values, and tables of relative and absolute frequencies were built to present the data.

Simple and multiple linear regression analyses were performed to determine the influence of independent variables such as age, marital status, maternal education, use of pacifier and bottle, as well as upon the dependent variable, not maintaining prolonged breastfeeding. Analyses were performed for variables that presented information completeness of at least 90% and were considered statistically significant at a descriptive level of <0.05 . All analyses were performed using Stata statistical software, version 13.1.

(Table 1).

Although more than half of the volunteers did not report having difficulties in breastfeeding, the most mentioned causes were breast complications, such as full breasts and reports of pain (data not shown in the table).

Using the simple logistic regression model when investigating which factors are associated with not maintaining prolonged breastfeeding, it was observed that the use of bottles and pacifiers were significantly dependent variables (Table 2). However, in an adjusted analysis, maternal age predisposes them to interrupt prolonged breastfeeding, as does the child's age, with the chance of stopping continued breastfeeding increasing by approximately 22% for each month of life.

According to the multiple logistic regression model, the use of pacifiers increases the chance of not maintaining prolonged breastfeeding by almost 20-fold, and children who use a bottle have this chance increased by 6-fold (Table 3).

The adoption of a bottle or pacifier for child care was prevalent in 34.4% (n=43) and 50.4% (n=63) of the cases, respectively. Figure 1 shows the estimated probabilities of not continuing breastfeeding, according to the use of a bottle (figure A) and pacifier (figure B) with the children's age, controlled by the variables presented in the multiple regression model. The non-overlapping of the confidence intervals shown in the figures indicates that there is a statistical difference in the probabilities of prolonged breastfeeding between the evaluated groups. It was observed that children who did not use a bottle or a pacifier were more likely to continue breastfeeding.

Table 1– Description of the sociodemographic characteristics of women attended at four basic health units in the city of Guarulhos. São Paulo, 2018.

	n	%
Total	125	100.00
Reference Unit		
Sao Rafael	30	24.00
Cabuçu	32	25.60
Ponte Alta	32	25.60
Cumbica II	31	24.80
Maternal Characteristics		
Age*	27,4	6.89
Marital Status		
Married	92	73.60
Single	33	26.40
Maternal Education		
Complete elementary school	14	11.20
Complete middle school	40	32.00
Complete high school	59	47.20
Higher Education (complete or incomplete)	12	9.60
Work		
Yes	28	22.40
No	97	77.60
Income		
Above 5 MW**	3	2.40
From 4-5 MW**	3	2.40
2-3 MW**	66	52.80
1 MW**	31	24.80
Less than 1 MW**	22	17.60
Number of people in the household*	4.2	1.36
Number of children*	2.2	1.57
Number of children		
One	49	39.20
Two	44	35.20
Three or more	32	25.60

*Mean and standard deviation.

**MW: minimum wage

Table 2– Simple Logistic Regression Model to identify factors associated with not maintaining breastfeeding by mothers of children aged between 6 and 24 months. Guarulhos, São Paulo, 2018.

	Simple Model	
	OR	p value
Maternal Characteristics		
Age*	1.03	0.290
Married	1	
Single	1.22	0.620
Maternal Education		
Complete elementary school	0.78	0.756
Complete middle school	1.27	0.723
Complete high school	1.18	0.795
Higher Education (complete or incomplete)	1	
Work		
Yes	1	
No	0.78	0.559
Age (months)	1.1	0.005
Do you use a bottle?		
Yes	1	
No	16.90	<0.001
Do you use a pacifier?		
Yes	10.40	
No	1	<0.001

Table 3– Multiple Logistic Regression Model to identify factors associated with not maintaining breastfeeding by mothers of children aged between 6 and 24 months. Guarulhos, São Paulo, 2018.

	Multiple Model	
	OR	p value
Maternal characteristics		
Age*		
Maternal characteristics	1.08	0.042
Age (months)*	1.22	<0.001
Do you use a bottle?		
Yes	5.97	0.007
No	1	
Do you use a pacifier?		
Yes	19.70	<0.001
No	1	
Difficulty breastfeeding?		
Yes	1.65	0.326
No	1	

Figure 1– Probabilities and 95% confidence intervals of not continuing breastfeeding according to the child's age and use of a bottle (A) and a pacifier (B). Guarulhos, São Paulo, 2018.

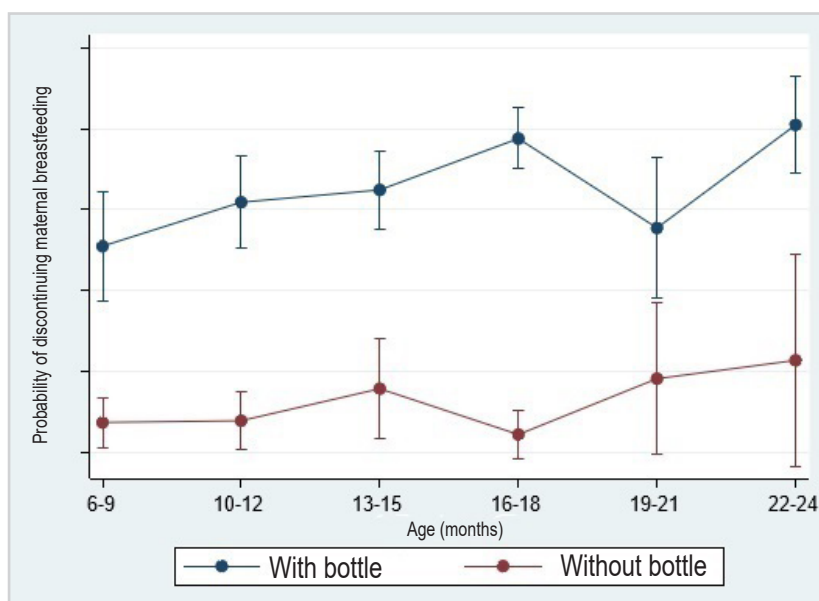


Figura 1 A– Probability and 95% confidence interval of discontinuing breastfeeding according to the child's age and bottle use. Guarulhos, São Paulo, 2018.

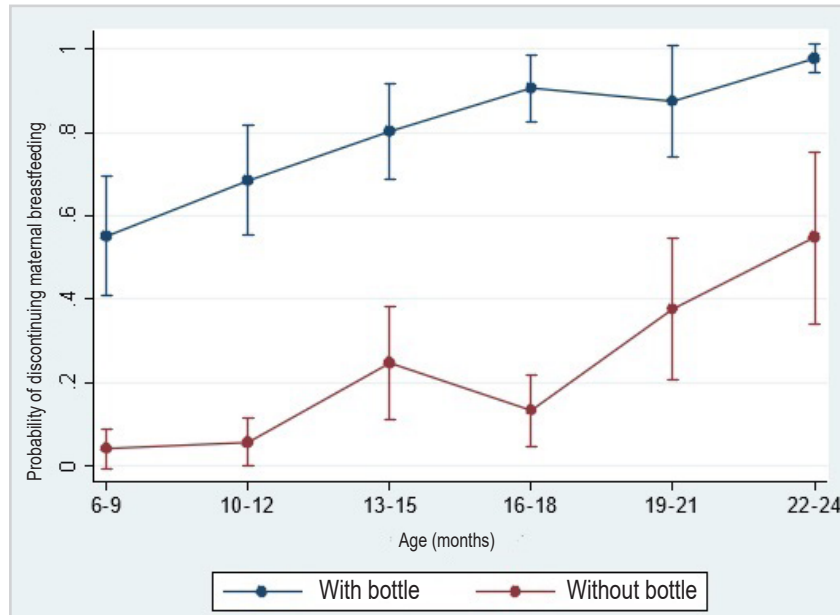


Figure 2– Probability and 95% confidence interval of discontinuing breastfeeding according to the child's age and use of a pacifier. Guarulhos, São Paulo, 2018.

DISCUSSION

The identification of factors associated with the continuation of breastfeeding for more than six months becomes essential in the adoption of health strategies in order to ensure the WHO recommendation, in the provision of breast milk for two years or more, as well as the benefits provided by this practice.

A systematic review that sought to understand factors involved in maintaining breastfeeding for 12 months or more identified the influence of socioeconomic and demographic factors such as older age and maternal education, the mother being married, and lower family income¹⁰. Although no significant association was found between marital status, maternal education, and family income herein, other studies have shown that married women with a higher level of education were more likely to prolong the duration of breastfeeding¹¹⁻¹². Higher education promotes more information for the mother, and is a positive

factor, while the need for low-income mothers to work to contribute to the household budget, can become a complicating aspect for breastfeeding¹²⁻¹³. Other studies, however, identified that mothers with greater purchasing power were more likely to interruption of breastfeeding when compared to those with low income^{4;11}. The maternal age in the present study was associated with not maintaining breastfeeding, which is unlike other studies in which this variable provided greater emotional stability and experience with previous children, allowing the mother to deal with difficulties^{9;11}.

The child's aging was shown to be a factor associated with not maintaining prolonged breastfeeding. A study on breastfeeding and feeding practices showed that breastfeeding had a decreasing trend month after month of the baby's life; however, between the fifth and sixth month of life there was a significant in-

crease in this drop, due to the introduction of other types of milk and complementary foods¹⁴.

Some studies argue that breastfeeding is a complex and biologically regulated phenomenon. Moreover, it is a practice strongly influenced by the historical, socioeconomic, cultural (myths and beliefs), and individual contexts that result from the concrete conditions that the nursing mother lives in^{11;15-16} and that, although it is desired that all mothers breastfeed, eventually this practice can be complicated in some dyads.

The results obtained in the present study show a low prevalence of conditions indicative of difficulties with the breastfeeding technique, with a full breast and the report of pain being the main reasons described for preventing the breastfeeding of babies. Hanieh *et al.*¹⁷ claim that having problems with the breast could trigger the use of food supplements as well as being an important risk factor for the development of common childhood illnesses such as pneumonia and diarrhea, increasing the chance interrupting breastfeeding and interfering in some aspects of the breastfeeding technique. In a prospective study carried out in Malaysia, it was observed that difficulties in breastfeeding due to problems with the breast, such as injury and nipple pain, were presented as an important predictive factor for the interruption of breastfeeding¹⁸.

A relevant aspect in the assessment of the maternal social context refers to the insertion of women in the labor market and their return after maternity leave¹⁰. Mothers who did not work outside the home adhered more to practice of breastfeeding, facilitated by their presence with their children, and consequently, the maintenance and extension of breastfeeding up to two years of age^{14;19}, corroborating the findings of this study. The interruption of breastfeeding can occur due to the woman's return to the labor market, where the use of in-

fant formula is evidenced and, consequently, the cessation of breastfeeding¹⁵.

The use of pacifiers and bottles were predictors of not maintaining the practice of breastfeeding after the sixth month of life. Studies suggest that the use of both a pacifier and a bottle, practices contraindicated by the WHO, should be seen as an indicator of a problem with breastfeeding²⁰⁻²⁴.

De Melo *et al.*²⁵ explain that in the bottle, the milking movements present in natural breastfeeding are not complete, that is, only the opening and closing movements take place. The replacement of breastfeeding by the bottle is cited by several authors as a consequential factor that affects children's health, delays psychological development, and lowers immune status when compared to children who were breastfed. Consequently, bottle-use results in the reduction in the time of breastfeeding and the difficulty of sucking the breast or even rejection due to preference for the artificial nipple^{21;24;26}. In addition, Medeiros and Bernardi²⁷ warn of other important aspects that can interfere with the child's health with the use of a bottle, since it can be a source of contamination.

Among the variables studied, the use of pacifiers was the factor most strongly associated with not maintaining prolonged breastfeeding, reinforcing the importance of discouraging its use. Studies show an inverse association between pacifier use and breastfeeding, as there is a possible mechanism that would be the reduction in the frequency of daily feedings, which could lead to low breast stimulation and a consequent decrease in the production of breast milk^{4;11;23;28}. The use of pacifiers is still a widespread cultural habit among Brazilian children, harmful to breastfeeding, and may lead to nipple confusion^{23;28}. In pacifier sucking, also called non-nutritive sucking habits, the infant remains for long periods sucking without noticing any food.

This practice can lead to "neural satiety" of sucking, muscle fatigue, and non-satiety, in addition to modifying their oral configuration to perform this type of muscle activity - different from breast suckling, causing, as mentioned above, "nipple confusion", which can negatively influence the technique of breastfeeding, the physiology of lactation and, finally, the duration of breastfeeding²².

Although most studies point to the use of artificial teats as a negative factor for breastfeeding, there is still disagreement about this relationship, reinforcing the need for more research to understand the causality related to unfavorable breastfeeding outcomes.

Therefore, guiding mothers about the importance of breastfeeding, care of the breasts, milking of breast milk, stimulation of correct

attachment, among others, can be an important factor to minimize interruption in breastfeeding. Health professionals have an important role, as their guidance can contribute to a better management of breastfeeding²⁹. Moreover, each child and their environment have their particularities that must be taken into account by the health professional.

Although the research has some limitations, such as: sample size and cross-sectional design, its relevant character is highlighted since the results allowed us to identify the main hindering factors in maintaining prolonged breastfeeding, supporting the development of strategies, and planning local health actions to promote this practice which brings benefits not only for the mother-child dyad, but also for the family and society as a whole.

CONCLUSION

It was observed that bottle and pacifier use were predictors associated with not maintaining prolonged breastfeeding. Among the difficulties in breastfeeding after the sixth month, it was noted that returning to work and storing breast milk were mentioned by the mothers.

Changing cultural habits is still difficult

but necessary through the actions of health professionals and continuous work, in order to guide pregnant women in prenatal care, nursing mothers at the beginning of breastfeeding, as well as family members for successful breastfeeding, thus, extending breastfeeding until the child reaches years old.

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