

Intention to breastfeed among pregnant women: association with work, smoking, and previous breastfeeding experience

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Abstract *The objective of this study was to estimate the prevalence of intention to breastfeed (IB) for an insufficient (under 6 months) or prolonged (24 months and longer) amount of time and to investigate its association with demographic and socioeconomic status, health behaviors, obstetric history, and previous breastfeeding experience among pregnant women. This is a cross-sectional study made with pregnant women under prenatal care in 17 units of the Family Health Strategy, in Colombo (PR). Crude and adjusted multinomial logistic regression analyses were used to identify associations between IB and exposure variables. Among pregnant women participating in the survey (n = 316), 99.1% reported IB. The average IB time was 13.5 months. The IB for insufficient and prolonged time was referred to by 9.8% and 22.0% of participants respectively. Those who presented the greatest changes of IB for insufficient time were women who: did not have a partner (OR 3.23, 95% CI 1.31; 7.94), who performed paid work (OR 5.56, 95% CI 2.10; 14.71), and smokers (OR 7.79, 95% CI 2.35; 25.81). Prolonged IB was more frequent among pregnant women with previous experience in prolonged breastfeeding (OR 3.05, 95% CI 1.02; 9.03). Factors associated to IA were found to support actions directed to vulnerable groups aiming the promotion of breastfeeding practices.*

Key words *Intention, Breastfeeding, Pregnancy*

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Introduction

Breastfeeding contributes positively for human development, especially during the first years of life. The benefits of breastfeeding go beyond nutritional qualities; they achieve short and long-term immunological and social aspects for the mother and the child^{1,2}.

The World Health Organization (WHO) recommendation is that breastfeeding should be maintained for two years or more and complemented by other foods as of six months of age³⁻⁵.

In a meta-analysis, which compiles data from 153 countries, it was observed that infants who were breastfed presented a lower chance of morbidity and mortality⁶. Among the benefits for infants who were breastfed over a longer period of time were observed: lower prevalence of type II diabetes and excess weight; proper development of dental occlusion; and greater intelligence when compared to children who were briefly breastfed or not breastfed^{2,6}. For lactating women, breastfeeding can prevent breast and ovarian cancer, increase the interval between pregnancies, and reduce the risk of developing diabetes².

In Brazil, data from 1999 to 2008 have evidenced the occurrence of early weaning and estimated that the probability of children being breastfed at six months of age was 77.6%, and at twelve months was 45.5%. For the southern region of the country, this probability was 72.1% at six months and 37.9% at 12 months of age⁷. In 2006, the National Survey of Demography and the Health of Women and Children (Pesquisa Nacional de Demografia e Saúde da Criança e da Mulher – PNDS)⁸ found that only 4 in every 10 children (39.8%) aged up to 180 days were under Exclusive Breastfeeding (EB).

The decision over breastfeeding occurs before pregnancy or in the first quarter of pregnancy⁹. The intention to breastfeed (IB) during the prenatal period is an important predicting factor of the duration of breastfeeding in women who gave birth to full term and preterm infants^{10,11}. Among the most commonly mentioned reasons to breastfeed, pregnant women first cite the benefits to the child's health, followed by the naturalness of breastfeeding, and the strengthening of the mother-child bond⁹.

A systematic review on IB found that primiparity, increased mother's age and education, previous breastfeeding experience, absence of smoking, and residing with a partner contributed positively to IB¹¹.

Considering that the prior intention to remain breastfeeding for a period of time influences the

actual duration of breastfeeding⁹, to know the factors related to the intention may be appropriate in order to adopt effective actions that promote breastfeeding. Thus, this study aims to estimate the prevalence of intention to breastfeed (IB) for an insufficient (under 6 months) or prolonged (24 months or longer) amount of time, and to investigate its association with demographic and socioeconomic status, behaviors related to health, obstetric history, and previous breastfeeding experience among pregnant women.

Methods

This is a cross-sectional study, compiling data from April to November 2016, in Colombo, a municipality on the metropolitan region of Curitiba, in Paraná (PR), Brazil. Populated by 234,941 inhabitants¹², Colombo had 17 Family Health Units (Unidades de Saúde da Família - USF) dedicated to Primary Healthcare. In May 2016, the municipality followed-up the prenatal care of 1,375 pregnant women under the Brazilian National Health System (Sistema Único de Saúde - SUS), according to estimates by the City Health Department.

Pregnant women who had prenatal care in the USF of the municipality and who presented low-risk pregnancy were selected as participants of this study. To the sample design parameters were applied a 95% confidence level, a five percent margin of error, and the prevalence of unknown outcome was set at 50% with the intent of increasing sample size, thus resulting in a minimum sample of 301 pregnant women. In order to reinstate any eventual losses due to refusals, 20% were added to the sample number, totaling 361 pregnant women for the final sample.

The estimative for studies of association from the minimum sample predicted in the calculation of prevalence would ($n = 301$), if a 95% confidence level and a 80% power were maintained, allow to identify associations between outcome and expositions with a minimum prevalence rate of 1.44, considering a 38.3% prevalence of outcome among non-exposed and 55% among exposed. The guides to estimate sample size for multinomial regressions indicate a minimum of 10 cases for each independent variable¹³. In the present study, the final model was composed of seven independent variables, distributed in 18 categories, which would result in a minimum sample size of 180 observations.

The sample was proportionally distributed in relation to the number of pregnant wom-

en registered in each USF. All pregnant women were consecutively invited from the calendar of prenatal appointments established by the health service. To participate in the study, the following inclusion criteria were followed: participants must have been pregnant at the time of interview (regardless of gestational age) and aged 18 years or older.

The data collection team was composed of nine interviewers, among them nutritionists and students of the graduation course in Nutrition of the Federal University of Paraná (UFPR). Before starting the collection, interviewers received training on the steps of the research. The pilot study occurred a few months before the beginning of the study, in one of the participant USF, with pregnant women in the second and third trimesters of pregnancy. The questionnaire used in data collection was previously tested and pre-coded. The duration of the interview and the comprehension of questions were evaluated by the interviewers. Pregnant women who participated in the test phase of the questionnaire were not included in the sample.

The interviews were performed in the waiting rooms for prenatal examination, after the pre-consultation performed by the staff of the USF, in which blood pressure and current weight were measured.

Age group (up to 20; 20-34; ≥ 35) and whether they resided with a partner (no, yes) were the variables that represented demographic status. Among the socioeconomic variables assessed were years of schooling (up to 7; 8-10; ≥ 11) and paid work (no, yes). The behavior related to health referred to whether the subject had been smoking at the time (no, yes). When applied, the obstetric history refers to the amount of previous pregnancies (1; 2; ≥ 3). Finally, the variable that corresponds to previous breastfeeding experience was time of breastfeeding in the first pregnancy, in months (< 6; 6-23; ≥ 24). Pregnant women were inquired about their IB (no, yes), and, when the answer was yes, the expectation of duration of breastfeeding was investigated by the researchers. After data collection, the duration of breastfeeding (in months) registered as a continuous variable was divided into three categories: 0-5; 6-23; and 24 or more. The category referred to in the analyses was of 6 to 23 months.

The double data entry was performed in the EpiData® software, version 3.0¹⁴, in which controls were added in order to insert the fields. A descriptive analysis of the data was performed using the calculation of averages, standard devi-

ations, median values, minimum, and maximum for the continuous variables. The categorical variables were described via absolute (n) and relative (%) frequencies.

Associations between the outcomes and exposure variables were investigated using Pearson's Chi-Square test. Multinomial logistic regression was employed for crude and adjusted analyses, considering the category of 6 to 23 months to be the reference. The analyses generated *Odds Ratios* (OR) related to the referred category and respective confidence intervals of 95% (95% CI).

The variables that attained significance with *p*-values lower than or equal to 0.25 in the association with the outcome analysis were added to the adjusted analysis. Initially, the demographic variables were inserted, followed by the socioeconomic ones, then behaviors related to health, obstetric history, and finally, previous breastfeeding experience. Variables that presented *p*-values up to 0.25 in the adjusted analysis were maintained and considered significant when *p*-values reached 0.05 or below.

This study was approved by the Research in Human Beings Ethics Committee of the Health Sciences Division of the Federal University of Paraná (UFPR), (Opinion no. 1463691), and was conducted according to the ethical standards required by the committee. All participants in the study have signed the Free and Informed Consent Form (IC).

Results

Of the 322 pregnant women who met the inclusion criteria and then invited to participate in the study, 316 completed the survey, 315 responded questions regarding IB, and 286 reported the time of IB. The average age of the participants was of 26.2 years (standard deviation of 6.0) and ranged from 18 to 45.7 years. Regarding the intended time of breastfeeding, participants with IB ($n = 313$) reported an average of 13.5 months (0 to 48 months; 95% CI 12.5; 14.4).

Table 1 presents the distribution of the sample, according to the studied characteristics, to women who specified the time of IB ($n = 286$). It was observed that 75.9% of pregnant women were aged between 20 and 34 years, 83.9% had a partner, 39.2% had between 8 to 10 years of schooling, and 57.3% were not under paid work. Additionally, 30.1% were found to be primipara, 9.8% smokers, and 20.1% mentioned previous experience with breastfeeding the first son for 24

Table 1. Distribution of pregnant women according to demographic and socioeconomic variables, health behavior, and obstetric history. Colombo -PR, 2016.

Variables	n (%)
Demographic	
Age (in years) (n = 286)	
Up to 20	40 (14.0)
20-34	217 (75.9)
≥35	29 (10.1)
Live with their partner (n = 286)	
No	46 (16.1)
Yes	240 (83.9)
Socioeconomic	
Schooling (in years) (n = 286)	
Up to 7	67 (23.4)
8-10	112 (39.2)
≥11	107 (37.4)
Paid work (n = 286)	
No	164 (57.3)
Yes	122 (42.7)
Health Behavior	
Smoking (n = 285)	
No	257 (90.2)
Yes	28 (9.8)
Obstetric History	
Number of pregnancies (n = 286)	
1	86 (30.1)
2	105 (36.7)
≥ 3	95 (33.2)
Breastfeeding time in the first pregnancy (in months) (n = 164)	
< 6	46 (28.1)
6 - 23	85 (51.8)
≥ 24	33 (20.1)
Outcome	
Intention to breastfeed (time/months) (n = 286)	
< 6	28 (9.8)
6 - 23	195 (68.2)
≥ 24	63 (22.0)

months or longer. Only three (0.9%) pregnant women declared no IB. The IB for fewer than 6 and more than 24 months was referred to by 9.8% and 22.0% of participants, respectively.

In the unadjusted analysis, it was observed that the chances of breastfeeding for fewer than 6 months were higher for pregnant women who did not have a partner, were under paid work, and were smokers (Table 2). After adjusted anal-

ysis, pregnant women that claimed to not have a partner (OR 3.23 95% CI 1.31; 7.94), those who performed paid work (OR 5.56 95% CI 2.10; 14.71), and those who were smokers (OR 7.79 95% CI 2.35; 25.81) presented greater chances of IB for a time inferior to 6 months. Pregnant women with a higher educational level reported having IB for a time inferior to 6 months less often, and the association with the largest number of pregnancies was no longer statistically significant after adjustment for the demographic and socioeconomic variables investigated (Table 3).

However, the chance to refer to IB for a time of 24 months or longer was more frequent among pregnant women aged between 20 and 34 years old, non-smokers, and with previous breastfeeding history for a time of 24 months or longer. Following adjusted analysis, pregnant women aged between 20 and 34 years showed a chance 3.05 times higher (95% CI 1.02; 9.03) of the IB for a period of 24 months or longer, when compared to those aged 20 or below. Women who have breastfed for a period of 24 months or longer in their first pregnancy were 7.32 times more likely (95% CI 1.99; 26.90) to present prolonged IB when compared to those who mentioned having breastfed their first child for 6 months or fewer (Table 3).

Discussion

Women decide to breastfeed before the child's birth, that is, before or during pregnancy, and this decision is related to the duration of breastfeeding¹⁵. This study allowed us to identify features related to IB and the intended duration of breastfeeding during pregnancies, in a sample representative of adult pregnant women, public healthcare (SUS) users, under prenatal follow-up in USFs of a municipality located in the metropolitan region of Curitiba (PR).

The average time of IB among pregnant women was over a year, with only three participants (0.9%) reporting not having IB. IB for 24 months or longer was reported more frequently by pregnant women aged 20 to 34 years, and who claimed having breastfed for over 24 months in the first pregnancy. However, IB for a time inferior to 6 months, that is, early weaning, was more frequently reported among pregnant women who did not have a partner, who performed paid work, and who were smokers.

The median of the EB in Brazil, between 1999 and 2008, was of 54.1 days (1.8 months)

Table 2. Distribution of demographic and socioeconomic variables, health behavior, and obstetric history of pregnant women according to the time of intention to breastfeed. Colombo-PR. (N = 286).

Variables	Fewer than 6 months	6 to 23 months	24 months or more	P-value*
	n(%)	n(%)	n(%)	
Demographic				
Age (in years) (n = 286)				0.300
Up to 20	4 (10.0)	32 (80.0)	4 (10.0)	
20-34	21 (9.7)	142 (65.4)	54 (24.9)	
≥ 35	3 (10.3)	21 (72.4)	5 (17.2)	
Live with their partner (n = 286)				0.026
No	9 (19.6)	25 (54.3)	12 (26.1)	
Yes	19 (7.9)	170 (70.8)	51 (21.3)	
Socioeconomic				
Schooling (in years) (n = 286)				0.248
Up to 7	9 (13.4)	40 (59.7)	18 (26.9)	
8-10	11 (9.8)	74 (66.1)	27 (24.1)	
≥ 11	8 (7.5)	81 (75.7)	18 (16.8)	
Paid work (n = 286)				0.001
No	7 (4.3)	114 (69.5)	43 (26.2)	
Yes	21 (17.2)	81 (66.4)	20 (16.4)	
Health Behavior				
Smoking (n = 285)				0.002
No	20 (7.8)	179 (69.6)	58 (22.6)	
Yes	8 (28.6)	16 (57.1)	4 (14.3)	
Obstetric History				
Number of pregnancies (n = 286)				0.162
1	4 (4.7)	66 (76.7)	16 (18.6)	
2	11 (10.5)	71 (67.6)	23 (21.9)	
≥ 3	13 (13.7)	58 (61.0)	24 (25.3)	
Breastfeeding time in the first pregnancy (in months) (n = 149)				0.001
< 6	10 (24.4)	26 (63.4)	5 (12.2)	
> 6 - 23	4 (5.2)	59 (76.6)	14 (18.2)	
≥ 24	4 (12.9)	10 (32.3)	17 (54.8)	

and breastfeeding was of 341.6 days (approximately 11.2 months)⁷. This positive difference observed between studies of IB and of prevalence of breastfeeding may be attributed to the fact that the present study has investigated the intention of performing breastfeeding, instead of studies that assessed the prevalence of EB at 6 months of age^{16,17} and after 12 months¹⁸, that is, the practical fulfillment of the behavior.

The difference between the intention of breastfeeding of pregnant women and its effectiveness as a nourisher, may occur due to factors not necessarily under directly woman's control. Breastfeeding is subject to physiological (insufficient milk, fatigue, tiredness), clinical (mastitis, breast engorgement) and cultural determinants,

in addition to the participation of the child, the pressures of the environment, support network, and psychological aspects¹⁹⁻²¹.

Despite the intention of represent an expectation regarding a future behavior, the results found in this research are consistent with findings from other studies regarding the factors that influence IB^{9-11,19}, but they present a higher expectation when compared to surveys conducted in the United States (44.9% to 64.6%)^{9,11,15,22,23} in England (20.0%)²⁴ and in China (53.9%)²⁵. In addition, the available data of national studies on breastfeeding are of 2008⁷, and studies that have assessed the time trend in the duration of breastfeeding in Brazil have indicated an increase in the total duration and in the prevalence of EB^{16,17,26}.

Table 3. Association of intention to breastfeed and demographic and socioeconomic variables, health behavior, and obstetric history. Colombo-PR, 2016.

Variables	Fewer than 6 months vs 6 to 23 months		24 or more months vs 6 to 23 months		
	OR (95% CI)	Adjusted OR (95% CI)	OR (95% CI)	Adjusted (95% CI)	OR
Demographic					
Age (in years) (n = 286)					
Up to 20	1	1	1		1
20 – 34	1.18 (0.37; 3.68)	1.19 (0.38; 3.75)	3.04 (1.02; 9.00)	3.05 (1.02; 9.03)	
≥ 35	1.14 (0.23; 5.63)	1.06 (0.21; 5.35)	1.90 (0.45; 7.92)	1.86 (0.44; 7.75)	
P-value*	0.834	0.896 ^a	0.309		0.328 ^a
Live with their partner (n = 286)					
Yes	1	1	1		1
No	3.22 (1.31; 7.90)	3.23 (1.31; 7.94)	1.60 (0.75; 3.40)	1.62 (0.75; 3.49)	
P-value*	0.011	0.011 ^a	0.223		0.237 ^a
Socioeconomic					
Schooling (in years) (n = 286)					
Up to 7	1	1	1		1
8 – 10	0.66 (0.25; 1.72)	0.64 (0.23; 1.80)	0.81 (0.40; 1.64)	0.89 (0.43; 1.85)	
≥ 11	0.43 (0.16; 1.22)	0.29 (0.09; 0.86)	0.50 (0.23; 1.05)	0.50 (0.23; 1.10)	
P-value*	0.113	0.023 ^b	0.059		0.074 ^b
Paid work (n = 286)					
No	1	1	1		1
Yes	4.22 (1.71; 10.40)	5.56 (2.10; 14.71)	0.65 (0.36; 1.19)	0.66 (0.35; 1.24)	
P-value*	0.002	0.001 ^b	0.168		0.253 ^b
Health Behavior					
Smoking (n = 285)					
No	1	1	1		1
Yes	4.4 (1.70; 11.76)	7.79 (2.35; 25.81)	0.77 (0.25; 2.40)	0.54 (0.16; 1.75)	
P-value	0.002	0.001	0.654		0.301
Obstetric History					
Number of pregnancies (n = 285)					
1	1	1	1		1
2	2.56 (0.77; 8.42)	2.71 (0.77; 9.57)	1.34 (0.65; 2.75)	1.25 (0.59; 2.63)	
≥ 3	3.70 (1.14; 11.97)	3.44 (0.86; 13.75)	1.70 (0.83; 3.52)	1.22 (0.54; 2.79)	
P-value*	0.027	0.122 ^d	0.145		0.556 ^d
Breastfeeding time in the first pregnancy (in months) (n = 164)					
< 6	1	1	1		1
6 – 23	0.18 (0.50; 0.61)	0.08 (0.02; 0.39)	1.23 (0.40; 3.78)	1.14 (0.36; 3.66)	
≥ 24	1.04 (0.30; 4.09)	0.46 (0.08; 2.68)	8.84 (2.57; 30.40)	7.32 (1.99; 26.90)	
P-value*	0.333	0.080 ^e	<0.001		0.003 ^e
Health Behavior					
Smoking (n = 285)					
No	1	1	1		1
Yes	4.40 (1.70; 11.76)	7.79 (2.35; 25.81)	0.77 (0.25; 2.40)	0.54 (0.16; 1.75)	

it continues

Table 3. Association of intention to breastfeed and demographic and socioeconomic variables, health behavior, and obstetric history. Colombo-PR, 2016.

Variables	Fewer than 6 months vs 6 to 23 months		24 or more months vs 6 to 23 months		
	OR (95% CI)	Adjusted OR (95% CI)	OR (95% CI)	Adjusted (95% CI)	OR
P-value	0.002	0.001	0.654		0.301
Obstetric History					
Number of pregnancies (n = 285)					
1	1	1	1		1
2	2.56 (0.77; 8.42)	2.71 (0.77; 9.57)	1.34 (0.65; 2.75)	1.25 (0.59; 2.63)	
≥ 3	3.70 (1.14; 11.97)	3.44 (0.86; 13.75)	1.70 (0.83; 3.52)	1.22 (0.54; 2.79)	
P-value*	0.027	0.122 ^d	0.145		0.556 ^d
Breastfeeding Experience					
Breastfeeding time in the first pregnancy (in months) (n = 164)					
<6	1	1	1		1
6 – 23	0.18 (0.50; 0.61)	0.08 (0.02; 0.39)	1.23 (0.40; 3.78)	1.14 (0.36; 3.66)	
≥ 24	1.04 (0.30; 4.09)	0.46 (0.08; 2.68)	8.84 (2.57; 30.40)	7.32 (1.99; 26.90)	
P-value*	0.333	0.080 ^e	<0.001		0.003 ^e

OR: Odds Ratio relative to category 6 to 23 months (reference); 95% CI: 95% Confidence Interval; *Wald Test for Multinomial Logistic Regression. Adjusted by levels: a) Demographic; b) Demographic and Socioeconomic; (c) Demographic, Socioeconomic, and Smoking; (d) Demographic, Socioeconomic, Smoking, and Obstetric History; e) Demographic, Socioeconomic, Smoking, Obstetric History, and Breastfeeding Experience.

In addition to contributing in the total duration of breastfeeding⁹, having a partner can positively influence IB, as uncovered in the present and other studies^{15,24,27}. On the one hand, during the breastfeeding period, emotional, social and economic supports emerge as the most important, and the partner stands out and has the greater weight in this period^{10,11,28-30}. On the other hand, a retrospective study with women in the military residing in the metropolitan region of Belo Horizonte (MG) demonstrated that, when compared to unmarried women, married women breastfed for less time (OR 7,08 95%CI 1.98; 25.16)³¹.

A literature review indicated mixed feelings of the male partners during the experience of breastfeeding, including some difficulty of feeling part of the process, complaints about their female partners' loss of sexual attraction, and the feeling of exclusion and abandonment through nights during breastfeeding³². Educational actions on the part of health teams with a view to the inclusion of the father in the prenatal care period, with more information, clarification of the benefits, doubts, and taboos of breastfeeding can have a positive influence on the mother's feeling during IB.

The chances of IB for fewer than 6 months were lower for pregnant women with a higher educational level. A similar study conducted in the United States found that 59.1% of women who intended to breastfeed had either finished high school or received their graduated²⁵. Morgado et al.²⁸ through cohort prospective studies investigated the association between networking and social support, and the feeding practices of infants through food recall with their mothers. They found that women with an incomplete elementary school degree were five times more likely (95% CI 1.77; 14.04) to introduce solid food and 4.37 times (95% CI 1.32; 14.5) not to feed their infant with breast milk when compared to those with a higher level of education.

Therefore, low education is associated with a shorter duration of the breastfeeding period. A study using data from the Survey of Health and Nutrition of Pernambuco (PESN) in the years 1991, 1997 and 2006 considered the higher level of schooling as a protection factor in the duration of the EB. It also demonstrated that women with nine or more years of formal education had a higher prevalence of IB in the sixth month (PR 1.8 95% CI 1.0; 3.4) when compared to those with less formal education.

One of the alternatives to encourage the practice of breastfeeding amongst women with low educational level is to provide some orientation during the prenatal care period. A larger number of consultations in the prenatal period can positively influence knowledge about breastfeeding³⁴. A cross-sectional study in India, in 2012, found that women who had received orientations during the prenatal period regarding EB were 2.68 times more likely (95% CI 1.27; 5.65) to have the intention of exclusively breastfeed until the sixth month³⁵.

Paid work, in turn, has been one of the most frequently cited factors for women to interrupt breastfeeding^{36,37}. In our research, pregnant women who performed paid work claimed to have an IB for a period of fewer than 6 months 5.56 times higher when compared to those who did not report to perform paid work. This result differs from that identified by another study, which found working pregnant women as a protective factor to breastfeeding²⁵. Other studies on IB did not find an association between the variables^{15,26,38}. It is worth mentioning that the present study measured IB and its total duration, unlike other studies that have assessed the IB versus intention to artificial feeding¹⁹. In addition, most employers adopt the maternity leave of four months, which may have influenced the estimates over IB time among the participants.

Research conducted with 200 female workers in São Paulo in 2008 pointed out that only 23.4% were able to breastfeed during the workday, and that 57% of this number managed to keep breastfeeding for more than four months, with a workday of fewer than eight hours. The same research demonstrated a lack of suitable places for breastfeeding or post-collection of breast milk, whereas only 12.5% provided the appropriate location for these purposes³⁷. In addition, 47.9% of Brazilian female workers had informal jobs, which makes it difficult to claim the right to maternity leave³⁷. In this sense, the maternity leave offered to female workers in formal jobs is beneficial and favors the adherence to breastfeeding in the first months of the baby. However, in Brazil, in order for the lactation to continue, other conditions need to be offered, such as availability of daycare in the workplace, room for milking and storage of milk, flexibility of working hours and breaks of 30 minutes during this journey^{31,37}.

Among the pregnant female smokers of this study, the chances of referring to the intention to breastfeed for fewer than six months was 7.79 times higher among smokers when compared to

non-smokers. Cigarette harms the stages of human reproduction, particularly pregnancy, due to its consequences on the birth and outcomes in the baby development and post-uterus life³⁹. During pregnancy, the consumption of cigarettes is associated with complications in the prenatal period, such as early abortion, low birth weight, premature birth, and complications in health in a long-term period^{39,40}. Smoking has shown to be a negative factor in the IB^{14,23,25} and in the total duration of breastfeeding²³.

In a cross-sectional study in Philadelphia, United States (USA) conducted with 2.690 women between 1999 and 2002, it was found that only 33,1% of female smokers reported intention to breastfeed. The authors attributed this number to the fact that they did not intend to stop smoking after giving birth and they did not wish to expose their infant to nicotine and other toxic substances through breast milk¹⁵. A systematic review suggests that pregnant smokers are likely to suffer negative influence on the duration of breastfeeding because they are aware of some harms caused by cigarette smoking, difficulty in quitting the addiction and lack of professional support²³.

The breastfeeding time of the first child revealed to be the most important factor of association on protection for prolonged breastfeeding among the participants. Research by Carrascoza et al.⁴⁰ found that mothers who had breastfed for longer periods showed 1.45 higher chances to extend the period of breastfeeding of the current baby. Meyerink and Marquis³⁹ verified among poor women in Southwestern USA that their previous breastfeeding experiences (their own when babies and their children's) have positively influenced the initiation and duration of breastfeeding. The authors also found that income and schooling in the patterns of breastfeeding could be influenced by maternal and family experiences with breastfeeding³⁹.

A study carried out in Piracicaba (São Paulo) found that women who breastfed their former children for more than six months had a higher chance of prolonging breastfeeding of the current infant when compared to those who had never breastfed⁴⁰. Takushi et al.⁴¹, in a qualitative study, found previous breastfeeding experiences to be a motivating factor for pregnant women to breastfeed the new infant. Pregnant women attributed the firstborn health to the time of breastfeeding.

Among the limitations of the present study, we can highlight its cross-sectional design and the lack of exclusive questioning about the IB. Moreover, it is possible that the pregnant wom-

en, when participating in the research within the USF, have felt constrained to respond according to an expected behavior, and informed the longest period of IB, especially those with greater access to information. Other factors that were not investigated in this research may influence the maintenance of the EB up to six months and its continuation beyond two years of life. Additionally, the sample may have not been sufficient to detect significant associations between some of the investigated variables and the time of IB, especially those of smaller magnitude. Future studies can verify if the breastfeeding period was similar to that the participants intended. Thus, they can also investigate the process of decision-making about the IB based on the Theory of the Planned Behavior⁴², and employ instruments that allow capturing the impact of attitude, subjective norms, and perception of behavior control to decision-making on IB.

Conclusion

The prevalence of IB proved to be satisfactory, with almost all of the pregnant women reporting it (99.05%), and 90.2% of pregnant women with IB for six months or longer. Thus, identifying women most likely to choose to breastfeed for fewer than 6 months, that is, to early weaning from breastfeeding, is essential. As such, it should occur by means of effective actions to protect and promote breastfeeding to this most vulnerable group. Health actions can be favored by health family groups, and by multi-professional groups involved in prenatal care. To cite some: the use of practical guides to breastfeeding, booklets with women and nourisher labor rights, breastfeeding demonstrations and follow-up visit in the puerperal period.

We highlight the importance of prenatal care by the multidisciplinary team for comprehensive

assistance to promote breastfeeding, taking into account both the social and psycho-emotional aspects involved in the process of breastfeeding and the importance of sharing previous experiences among pregnant women. The number of prenatal visits and the quality of the information about breastfeeding conveyed during this period can raise awareness of the benefits and clarify possible doubts and fears about breastfeeding.

Factors such as not having a partner, having paid work and being a smoker were negatively associated with the duration of breastfeeding. Actions to identify these women in the prenatal period as well as the deployment of strategies based on their characteristics of vulnerability can positively influence breastfeeding duration.

Still, we highlight the importance of broadening the benefits and labor rights of pregnant women and/or mothers, such as the expansion of paid maternity leave – from four to six months for all formal workers –, as well as policies that assist informal workers in a way to provide favorable conditions for breastfeeding for more than six months.

Finally, previous breastfeeding experience for a time longer than or equal to 24 months of the first child proved to be a protection factor for a prolonged IB of the pregnant women, our research participants. Actions that favor the exchange of knowledge, skills, and experiences between women who have had positive and lasting experiences in former lactation and primipara can help in the intention to breastfeed for women with negative or short previous experiences. Therefore, the present research provides relevant information to the field of collective health, given the existence of information emerging about the IB in the scientific environment and that can be employed to the planning of actions in primary health care and to the identification of groups with greater vulnerability to early weaning.

Collaborations

RC Fernandes and DA Höfelmann participated in the research planning, analysis and interpretation of data, writing of the article, and approval of the final version of the article.

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