



EXCLUSIVE BREASTFEEDING AND FACTORS ASSOCIATED WITH EARLY WEANING AT A BABY-FRIENDLY HOSPITAL IN SOUTHERN BRAZIL

ALEITAMENTO MATERNO EXCLUSIVO E OS FATORES ASSOCIADOS AO DESMAME PRECOCE EM UMA MATERNIDADE AMIGA DA CRIANÇA DO SUL DO BRASIL

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Received: 13 Oct. 2024

Accepted: 5 Dec. 2024

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ABSTRACT: **Objective:** To investigate the exclusive breastfeeding rate and factors associated with early weaning in a Baby-Friendly Hospital in Southern Brazil, comparing findings across trimesters. **Methods:** Our study employed a prospective, longitudinal observational cohort design with a quantitative approach. We collected data through telephone interviews over six months involving postpartum women with low-risk pregnancies who gave birth at the selected hospital. **Results:** A total of 282 postpartum women participated. The prevalence of exclusive breastfeeding was 86.2% in the first trimester and 87.2% in the second trimester. Key factors contributing to early breastfeeding cessation included the lack of maternity leave and the introduction of formula. **Conclusion:** The high rates of exclusive breastfeeding up to six months align with the World Health Organization guidelines. However, we identified factors associated with early weaning, such as low income, living in rental housing, White ethnicity, and having a partner who smokes. **Relevance:** This study is significant for identifying socioeconomic and behavioral factors contributing to early weaning, even within the context of high exclusive breastfeeding rates. Understanding these factors supports the development of targeted interventions for vulnerable groups, including low-income women, renters, and those with smoking partners, who are at higher risk of early weaning. Our study contributes to implementing more effective public policies and health programs that integrate holistic care and educational initiatives during prenatal care and the early postpartum period to extend the duration of exclusive breastfeeding.

KEYWORDS: Breastfeeding. Baby-Friendly Hospital Initiative. Lactation. Breast milk. Nutrition

RESUMO: **Objetivo:** Investigar a taxa do aleitamento materno exclusivo e o os fatores associados ao desmame precoce em uma maternidade amiga da criança no Sul do Brasil e compará-los por trimestre. **Método:** estudo observacional de coorte prospectivo, longitudinal, com abordagem quantitativa, com dados coletados por meio de entrevistas telefônicas ao longo de 6 meses, envolvendo puérperas de gestação de risco habitual que deram à luz na maternidade pesquisada. **Resultados:** Participaram 282 puérperas. A prevalência de aleitamento materno exclusivo foi de 86,2% e 87,2% no primeiro e segundo trimestre, respectivamente. Os principais fatores que contribuíram para a suspensão precoce da amamentação incluíram a não concessão da licença-maternidade, a introdução de fórmulas. **Conclusão:** As altas taxas de amamentação exclusiva até os seis meses estão em conformidade com as diretrizes da Organização Mundial da Saúde. No entanto, identificou fatores associados ao desmame precoce, como baixa renda, moradia em aluguel, etnia branca e comportamento do parceiro fumante favorecem ao desmame precoce. **Relevância:** Este estudo é relevante ao identificar fatores socioeconômicos e comportamentais que contribuem para o desmame precoce, mesmo em um contexto com elevada taxa de aleitamento materno exclusivo. A compreensão desses fatores permite o desenvolvimento de intervenções específicas para grupos vulneráveis, como mulheres de baixa renda, moradoras de aluguel e com parceiros fumantes, que apresentam maior prevalência de desmame precoce. O estudo contribui para a implementação de políticas públicas e programas de saúde mais eficazes, que integrem cuidados holísticos e ações educativas no pré-natal e nos primeiros meses pós-parto, visando aumentar a duração da amamentação exclusiva.

PALAVRAS-CHAVE: Aleitamento. Iniciativa Hospital Amigo da Criança. Lactação. Leite materno. Nutrição.

INTRODUCTION

Breast milk is considered the ideal food for infant health, particularly during the first six months of life, due to its nutritional composition, rich in minerals, vitamins, and immunoglobulins^{1,2}. As an essential resource for infant development, various global initiatives promote breastfeeding through educational practices aimed to raise awareness of its benefits and overcome biological, psychosocial, and socioeconomic challenges associated with the practice³.

Despite these efforts, epidemiological data released in 2023 indicate that only 41% of newborns are breastfed within the first hour of life⁴, and globally, only about 44% of infants under six months are exclusively breastfed⁵. In Brazil, data from the 2021 National Study on Infant Feeding and Nutrition revealed a 45.8% prevalence of exclusive breastfeeding (EBF) during the first six months of life⁶. Among Brazil's regions, the South had the highest rates at 54.3%, followed by the Southeast (49.1%), Central-West (46.5%), Northeast (39%), and North (40.3%)⁶.

In Brazil, the National Policy for Comprehensive Child Health Care (PNAISC) aims to promote and protect child health and EBF through comprehensive care from pregnancy to nine years of age, focusing on reducing morbidity and mortality, particularly among vulnerable populations⁴. The Baby-Friendly Hospital Initiative (BFHI) has been highly significant in the Brazilian context as a global health program that provides mechanisms to stimulate changes in how local maternity hospitals promote infant and child feeding⁷.

Evidence suggests that hospitals certified as Baby-Friendly Hospitals (BFHs) show higher breastfeeding indicators than non-certified units, increasing the likelihood of newborns being breastfed within the first hour of life by 9%⁸. The average duration of EBF for children born in these hospitals reached 60.2 days, compared to 48.1 days for children born in non-certified hospitals^{4,9}.

At the start of breastfeeding, women often encounter challenges related to psychosocial issues, health conditions, milk production, lifestyle factors, and pain, which can lead to early weaning. Identifying these difficulties at an early stage facilitates effective management and the continuation of breastfeeding, contributing to maternal and child health^{10,11}. Since health guidance and monitoring of women during the initial stages of breastfeeding are critical for its success and duration¹², this study aimed to investigate the exclusive breastfeeding rate and factors associated with early weaning in a Baby-Friendly Hospital in a municipality in Southern Brazil, comparing findings across trimesters.

METHODOLOGY

STUDY CONTEXT

We conducted a prospective, longitudinal observational cohort study with a quantitative approach, involving 282 postpartum women who delivered their children in a public Baby-Friendly Maternity Hospital in a municipality in Southern Brazil. Our study adhered to the guidelines outlined in the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) initiative¹³.

STUDY SETTING AND PERIOD

In 2019, we conducted this study in a maternity hospital that exclusively serves patients through Brazil's Unified Health System (SUS). The maternity hospital is guided by several practices aligned with

the principles of humanization. These include offering prenatal courses for expectant mothers, allowing the choice of a companion throughout the labor process, ensuring rooming-in care, promoting non-pharmacological pain relief techniques (such as massages, baths, and ambulation), cautious use of intravenous induction (oxytocin), analgesia, and episiotomy, providing the option for squatting delivery, and abolishing outdated practices like enemas and pubic hair shaving.

POPULATION AND SELECTION CRITERIA

The study population consisted of postpartum women who gave birth at the participating maternity hospital. Inclusion criteria were being classified as having a low-risk pregnancy and completing at least one research questionnaire. Exclusion criteria included postpartum women with clinical conditions preventing breastfeeding (e.g., retroviral infections); preterm newborns requiring neonatal unit care; maternal use of medications or substances contraindicating breastfeeding according to breastfeeding guidelines and the Ministry of Health manual¹²; and those who did not answer phone calls or failed to respond to the questionnaire via WhatsApp.

SAMPLE DEFINITION, INSTRUMENTS, AND DATA COLLECTION

We employed convenience sampling to allow all postpartum women meeting the inclusion criteria and willing to participate to join the study.

For data collection, we utilized two questionnaires. The first gathered sociodemographic information, birth conditions, and maternal and newborn health aspects. The second contained seven closed-ended questions with “yes” or “no” response options regarding breastfeeding support. Additionally, we created a table with participants’ contact information, baby identification details, date and time of birth, and patient records from the electronic medical system.

A team of 12 trained volunteer researchers conducted the data collection. The team included 11 nursing interns from the institution and one nursing resident. A predefined schedule ensured consistency and scientific rigor during data collection. We also performed a pilot study involving ten postpartum women to identify potential inconsistencies or biases. Data from the pilot study were not included in the final sample.

The research team personally invited all postpartum women who met the inclusion criteria to participate. We presented the study’s details to participants and provided the Informed Consent Form (ICF) for signature. In the case of adolescent participants, both an Assent Form and the ICF were presented to their legal guardians for signature.

The data collection process occurred in two stages:

First Stage: In-person Interviews - We conducted in-person interviews with postpartum women admitted to the rooming-in unit 24 hours after delivery. During this stage, we applied the questionnaire covering sociodemographic information, birth conditions, and maternal and newborn health aspects. Additionally, we collected data from the patients’ electronic medical records. To ensure privacy and minimize interruptions, we conducted interviews in a designated private room within the maternity facility. This stage took place from April 5 to May 5, 2019, seven days a week.

Second Stage: Breastfeeding Follow-Up - This stage involved monitoring exclusive breastfeeding status through telephone interviews. We administered the breastfeeding questionnaire after hospital discharge, starting on the newborn’s seventh day of life, then repeated on the 15th day, at one month, and monthly thereafter until the infant reached six months. Data collection for this stage was conducted

seven days a week from May to October 2019, based on the infants' age milestones. Three attempts were made to contact all participants via telephone. To minimize follow-up losses when participants did not answer the phone, we administered questionnaires via WhatsApp® when necessary.

STUDY VARIABLES

We collected data on sociodemographic profiles, including age (< 18 years, 18– 25 years, 26–35 years, 36–55 years), educational level (complete primary education, incomplete primary education, complete secondary education, incomplete secondary education, complete higher education, or incomplete higher education), employment status (formal or informal), and housing status (rented or owned). We also categorized participants by monthly income (< BRL 1,412; BRL 1,412–2,824; BRL 2,824–4,236; > BRL 4,236).

For breastfeeding-related variables, we investigated whether participants continued breastfeeding (yes or no), experienced problems or complications related to breastfeeding (when yes, we identified issues such as fissures, engorgement, mastitis, low milk secretion, latch difficulties, or others), provided anything beyond breast milk to their child (yes or no), introduced pacifiers or artificial nipples (yes or no), had their infant hospitalized after discharge (yes or no), experienced infant death (yes or no), maintained exclusive breastfeeding (yes or no), took maternity leave (when yes, we recorded the duration: 30, 60, or 120 days), introduced formula feeding, or engaged in mixed feeding (formula + breast milk), among others.

STATISTICAL ANALYSIS

We performed statistical analysis using the Statistical Package for the Social Sciences (SPSS) - version 25.0 for Windows (SPSS Inc., Chicago, IL, USA, 2018). Data were initially organized in Microsoft Excel® spreadsheets.

For descriptive analysis, we used cross-tabulation to identify patterns and relationships between categorical variables and calculate percentages, ratios, and other measures to interpret the associations between study variables (exclusive breastfeeding vs. early weaning).

To analyze statistical differences in early weaning cases across the three time periods, we applied the Student's t-test for paired samples. For prevalence ratio analysis, we utilized Poisson regression.

ETHICAL ASPECTS

In conducting this study, we adhered to all ethical guidelines established by Resolution No. 580/18 of the Brazilian National Health Council. We conducted the research only after receiving approval from the Ethics Committee of Hans Dieter Schmidt Regional Hospital/State Health Department of Santa Catarina. The study was approved under protocol number 3.215.785, issued on March 22, 2019, with the CAAE identifier 06419318.0.0000.5363.

RESULTS

Over 30 days, we invited postpartum women at the maternity hospital to participate in our study, which monitored breastfeeding practices for six months postpartum. A total of 282 postpartum women

participated, with an average age of 26.2 years. Most participants were married, identified as White, had completed secondary or higher education, and were employed (Table 1).

Table 1 - Sociodemographic characteristics of postpartum women, n=282, Joinville, SC, Brazil, 2019

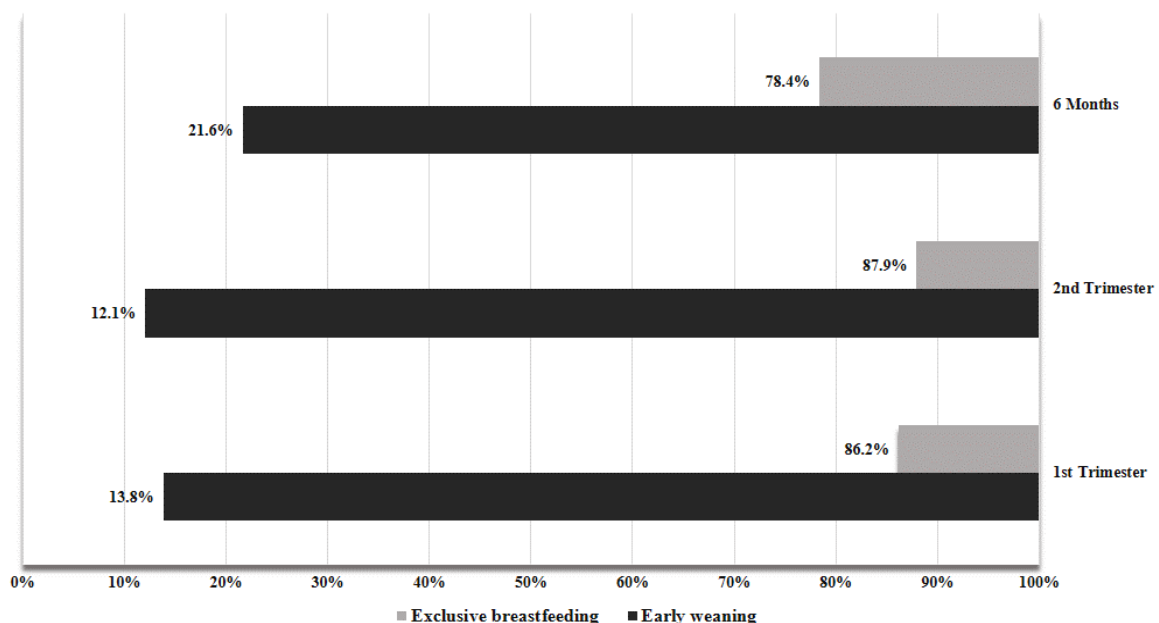
Variable	n = 282*	%
Age group (years)		
< 18	18	6.3%
18–25	121	43%
26–35	114	40.4%
> 36–55	29	10.2%
Ethnicity		
White	209	74.1%
Mixed-race	56	19.8%
Indigenous	1	0.3%
Black	16	5.6%
Education level		
Completed primary education	36	12.7%
Incomplete primary education	37	13.1%
Completed secondary education	116	41.1%
Incomplete secondary education	41	14.5%
Completed higher education	26	9.2%
Incomplete higher education	24	8.5%
Unknown	2	0.7%
Employment status		
Formal	108	38.2%
Informal	51	18.0%
Unemployed	123	43.7%

Source: Research data, (2019)

* N: Total number.

Our sample comprised breastfeeding women, among whom 221 reported exclusively breastfeeding. Among these, only a minority experienced early weaning during the six-month period, as highlighted in Figure 1.

Figure 1 – Rate of exclusive breastfeeding and early weaning, Joinville, SC, Brazil.



Source: Research data (2019)

Table 2 presents the sociodemographic characteristics of women who reported early weaning. Most instances of early weaning occurred in the first trimester compared to the second trimester and the total six-month follow-up period.

Regarding age groups, early weaning in the first trimester was most prevalent among women aged 31–36 (30.8%), while exclusive breastfeeding was more common among women aged 21–26 (35.8%). During the second trimester and at six months, early weaning was most prevalent in the 21–26 age group (44.1% and 29.5%, respectively), as was exclusive breastfeeding (31.5% and 33.9%).

In terms of marital status, we observed that married women maintained a consistent prevalence of exclusive breastfeeding across all three time points, both among those who experienced early weaning and those who continued exclusive breastfeeding. Most participants identified as White.

At six months, among women who experienced early weaning, 68.9% had completed secondary or higher education, 67.2% were employed, 65.6% received wages, 86.9% earned two or more minimum wages, 50.8% rented their homes, 86.9% were non-smokers, 59% had a non-smoking partner, 65.6% had no family members who smoked, and 95% reported no use of alcohol or drugs.

Conversely, among women who maintained exclusive breastfeeding for six months, 76.9% had completed secondary or higher education, 59.7% were employed, 59.3% received wages, 96.8% earned two or more minimum wages, 53.4% owned their homes, 91.9% were non-smokers, 67.9% had a non-smoking partner, 67.9% had no family members who smoked, and 97.3% reported no use of alcohol or drugs.

Additionally, 42.6% of women who experienced early weaning had maternity leave, compared to 43% of women who maintained exclusive breastfeeding.

Table 2 – Cross-analysis of sociodemographic factors, early weaning, and exclusive breastfeeding, Joinville, SC, Brazil (N = 282).

	1st Trimester				2nd Trimester				6 months				Total	
	Weaning		Exclusive breastfeeding		Weaning		Exclusive breastfeeding		Weaning		Exclusive breastfeeding			
	n = 39*	%	n=243*	%	n = 34*	%	n=248*	%	n= 61*	%	n=221*	%	n=282*	%
Age group (years)														
14–20	9	23,1%	50	20,6%	5	14,7%	54	21,8%	17	27,9%	42	19,0%	59	20,9%
21–26	6	15,4%	87	35,8%	15	44,1%	78	31,5%	18	29,5%	75	33,9%	93	33,0%
27–30	8	20,5%	51	21,0%	5	14,7%	54	21,8%	9	14,8%	50	22,6%	59	20,9%
31–36	12	30,8%	37	15,2%	8	23,5%	41	16,5%	13	21,3%	36	16,3%	49	17,4%
37–40	4	10,3%	12	4,9%	0	0,0%	16	6,5%	4	6,6%	12	5,4%	16	5,7%
41–45	0	0,0%	5	2,1%	1	2,9%	4	1,6%	0	0,0%	5	2,3%	5	1,8%
46–55	0	0,0%	1	0,4%	0	0,0%	1	0,4%	0	0,0%	1	0,5%	1	0,4%
Marital status														
Married	34	87,2%	218	89,7%	29	85,3%	223	89,9%	56	91,8%	196	88,7%	252	89,4%
Single	5	12,8%	25	10,3%	5	14,7%	25	10,1%	5	8,2%	25	11,3%	30	10,6%
Ethnicity														
White	34	87,2%	175	72,0%	25	73,5%	184	74,2%	39	63,9%	170	76,9%	209	74,1%
Mixed-race	5	12,8%	51	21,0%	6	17,6%	50	20,2%	15	24,6%	41	18,6%	56	19,9%
Black	0	0,0%	16	6,6%	3	8,8%	13	5,2%	7	11,5%	9	4,1%	16	5,7%
Indigenous	0	0,0%	1	0,4%	0	0,0%	1	0,4%	0	0,0%	1	0,5%	1	0,4%
Education level														
Primary	7	17,9%	63	25,9%	6	17,6%	64	25,8%	19	31,1%	51	23,1%	70	24,8%
Secondary and higher	32	82,1%	180	74,1%	28	82,4%	184	74,2%	42	68,9%	170	76,9%	212	75,2%
Employment status														
Yes	26	66,7%	147	60,5%	23	67,6%	150	60,5%	41	67,2%	132	59,7%	173	61,3%
No	13	33,3%	94	38,7%	11	32,4%	96	38,7%	20	32,8%	87	39,4%	107	37,9%
No response	0	0,0%	2	0,8%	0	0,0%	2	0,8%	0	0,0%	2	0,9%	2	0,7%
Compensation														
Yes	25	64,1%	146	60,1%	23	67,6%	148	59,7%	40	65,6%	131	59,3%	171	60,6%
No	1	2,6%	1	0,4%	1	2,9%	1	0,4%	1	1,6%	1	0,5%	2	0,7%
No response	13	33,3%	96	39,5%	10	29,4%	99	39,9%	20	32,8%	89	40,3%	109	38,7%
Income														
1 minimum wage	8	20,5%	7	2,9%	7	20,6%	8	3,2%	8	13,1%	7	3,2%	15	5,3%

	1st Trimester				2nd Trimester				6 months				Total	
	Weaning		Exclusive breastfeeding		Weaning		Exclusive breastfeeding		Weaning		Exclusive breastfeeding			
	n = 39*	%	n=243*	%	n = 34*	%	n=248*	%	n= 61*	%	n=221*	%	n=282*	%
2 or more minimum wages	31	79,5%	236	97,1%	27	79,4%	240	96,8%	53	86,9%	214	96,8%	267	94,7%
Housing														
Rented	18	46,2%	115	47,3%	22	64,7%	111	44,8%	31	50,8%	102	46,2%	133	47,2%
Owned	21	53,8%	127	52,3%	12	35,3%	136	54,8%	30	49,2%	118	53,4%	148	52,5%
No response	0	0,0%	1	0,4%	0	0,0%	1	0,4%	0	0,0%	1	0,5%	1	0,4%
Smoker														
Yes	6	15,4%	20	8,2%	5	14,7%	21	8,5%	8	13,1%	18	8,1%	26	9,2%
No	33	84,6%	223	91,8%	29	85,3%	227	91,5%	53	86,9%	203	91,9%	256	90,8%
Partner smokes														
Yes	10	25,6%	56	23,0%	5	14,7%	53	21,4%	20	32,8%	46	20,8%	66	23,4%
No	24	61,5%	162	66,7%	13	38,2%	170	68,5%	36	59,0%	150	67,9%	186	66,0%
No response	5	12,8%	25	10,3%	16	47,1%	25	10,1%	5	8,2%	25	11,3%	30	10,6%
Family smoker														
Yes	13	33,3%	79	32,5%	16	47,1%	76	30,6%	21	34,4%	71	32,1%	92	32,6%
No	26	66,7%	164	67,5%	18	52,9%	172	69,4%	40	65,6%	150	67,9%	190	67,4%
Alcohol and drugs														
Yes	1	2,6%	7	2,9%	1	2,9%	7	2,8%	3	4,9%	5	2,3%	8	2,8%
No	38	97,4%	235	96,7%	33	97,1%	240	96,8%	58	95,1%	215	97,3%	273	96,8%
No response	0	0,0%	1	0,4%	0	0,0%	1	0,4%	0	0,0%	1	0,5%	1	0,4%
Maternity leave														
Yes	17	43,6%	104	42,8%	15	44,1%	106	42,7%	26	42,6%	95	43,0%	121	42,9%
No	2	5,1%	3	1,2%	2	5,9%	2	0,8%	3	4,9%	2	0,9%	5	1,8%
No response	20	51,3%	136	56,0%	17	50,0%	139	56,0%	32	52,5%	124	56,1%	156	55,3%

Source: Research data (2019).

Table 3 reveals a positive and significant difference ($p = 0.004$) when comparing the first trimester with the six-month follow-up, indicating a higher number of women reporting early weaning at six months. We also observed a significant increase ($p = 0.000$) in early weaning cases between the second trimester and six months.

Table 3 – Statistical differences between periods regarding early weaning, Joinville, SC, Brazil (N = 282)

Pairs	Mean	Standard deviation	Standard Error of the Mean	Confidence Interval of the Differences (95%)		T*	G†	Two-tailed Sig
				Lower	Upper			
1° Trim x 2° Trim	-0,018	0,391	0,023	-0,064	0,028	-0,762	281	0,447
1° Trim x 6 Meses	0,078	0,448	0,027	0,026	0,130	2,927	281	0,004
2° Trim x 6 Meses	0,096	0,406	0,024	0,048	0,143	3,956	281	0,000

Source: Research data (2019)

* T: total; † df: degrees of freedom.

Among women aged 31–36, early weaning in the first trimester was 2.112 times more prevalent, as shown in Table 4.

Regarding ethnicity, White women were 2.4 times more likely to experience early weaning in the first trimester but had a lower prevalence (0.621 times) at six months compared to women of other ethnicities. Black women, however, demonstrated a higher prevalence of early weaning at six months (2.158 times) compared to women of other ethnicities.

When examining income, women earning one minimum wage had a prevalence ratio of 4.595 for early weaning in the first trimester compared to women earning two or more minimum wages. This prevalence ratio was 4.624 in the second trimester and 2.678 at six months. These findings underscore income as a significant factor in early weaning, with lower-income women exhibiting higher prevalence ratios across all time points.

Women living in rented housing had a prevalence ratio of 2.037 for early weaning in the second trimester compared to those who owned their homes. Additionally, women with smoking partners had a prevalence ratio of 2.031 for early weaning in the second trimester compared to those with non-smoking partners.

Table 4 – Prevalence ratios for early weaning during the first and second trimesters and at six months postpartum, Joinville, SC, Brazil, 2019 (n = 282)

	1st Trimester			2nd Trimester			6 months		
	Weaning (n=39) ‡	CI = 95%†		Weaning (n=34) ‡	CI = 95%†		Weaning (n=61) ‡	CI = 95%†	
	PR*	Lower	Upper	PR *	Lower	Upper	PR *	Lower	Upper
Age group (years)									
14–20	1,133	0,517	2,596	0,654	0,229	1,677	1,462	0,857	3,163
21–26	0,371	0,131	0,809	1,594	0,831	3,564	0,851	0,440	1,510
27–30	0,978	0,421	2,242	0,654	0,229	1,677	0,657	0,273	1,284
31–36	2,112	1,152	5,316	1,455	0,657	3,672	1,286	0,685	2,829
37–40	1,894	0,672	7,204	-	-	-	1,168	0,380	3,934
41–45	-	-	-	1,681	0,201	17,041	-	-	-
46–55	-	-	-	-	-	-	-	-	-
Marital status									
Married	1			1			1		
Single	0,808	0,280	2,175	0,689	0,231	1,831	1,329	0,523	3,903
Ethnicity									
White	2,397	1,992	7,038	0,976	0,428	2,179	0,621	0,289	0,978
Mixed-race	0,593	0,206	1,487	0,863	0,333	2,161	1,294	0,729	2,810
Black	-	-	-	1,607	0,472	6,484	2,158	1,088	8,570
Indigenous	-	-	-	-	-	-	-	-	-
Education level									
Primary	1			1			1		
Secondary and higher	1,510	0,673	3,806	1,535	0,643	4,099	0,731	0,355	1,240
Employment status									
Yes	1,261	0,640	2,667	1,317	0,637	2,928	1,295	0,760	2,514
No	1			1			1		
No response									
Yes	1,159	0,587	2,396	1,364	0,659	3,027	1,238	0,724	2,366
No	1			1			1		
No response									
Income	4,595	2,951	25,653	4,624	2,616	23,124	2,678	1,602	13,293

	1st Trimester			2nd Trimester			6 months		
	Weaning (n=39) ‡	CI = 95%†		Weaning (n=34) ‡	CI = 95%†		Weaning (n=61) ‡	CI = 95%†	
	PR*	Lower	Upper	PR *	Lower	Upper	PR *	Lower	Upper
1 minimum wage	1			1			1		
2 or more minimum wages									
Housing	0,957	0,484	1,879	2,037	1,073	4,774	1,159	0,684	2,126
Rented	1			1			1		
Owned									
No response	1,791	0,759	5,417	1,699	0,653	5,321	1,488	0,702	4,129
Smoker	1			1			1		
Yes									
No	1,134	0,529	2,508	2,031	1,070	4,848	1,595	0,993	3,469
Partner smokes	1			1			1		
Yes									
No	1,029	0,506	2,128	1,832	0,974	4,156	1,081	0,609	2,019
No response	1			1			1		
Family smoker									
Yes	0,899	0,106	7,415	1,042	0,124	8,750	1,769	0,519	9,626
No	1			1			1		
Alcohol and drugs									
Yes	1,022	0,522	2,043	1,051	0,514	2,178	0,991	0,555	1,748
Yes	1			1			1		

Source: Research data 2019.

* PR: prevalence ratio; † CI: confidence interval; ‡ n: total number.
Poisson regression

DISCUSSION

This study highlighted breastfeeding rates during the first six months of life for infants born in a BFH in a municipality in southern Brazil. Our cohort of women demonstrated a high prevalence of exclusive breastfeeding at six months (78.4%), aligning with findings from studies conducted in Taiwan¹⁴ and Brazil¹⁵.

Studies conducted in Europe (e.g., Belgium and Switzerland) and the United States have reported contrasting results regarding EBF. These studies investigated breastfeeding rates in hospitals certified and uncertified by the Baby-Friendly Hospital Initiative (BFHI), employing various analytical methods and evaluation periods^{16,17,18}. However, they did not identify strong evidence for long-term impacts on EBF. This divergence from global assessments of BFHI implementation^{19,20} suggests that cultural factors related to maternal and child care may play a critical role, as previously discussed²¹.

Maternity hospitals lacking Baby-Friendly certification often exhibit gaps in essential practices that promote breastfeeding²². Research consistently supports these findings, indicating lower EBF rates in non-certified facilities²³. For instance, a study conducted in primary care revealed that the absence of breastfeeding support practices in the early days of life significantly increases the risk of early weaning²⁴, aligning with studies that highlight shortcomings in healthcare systems in promoting, protecting, and supporting EBF during the neonatal period⁵.

A study carried out in 2018²⁵ revealed a significant reduction in exclusive breastfeeding rates, which dropped from 44.9% to 10.1% between four and six months. Similarly, a study conducted in Turkey²⁶ found that women who delivered in private hospitals without Baby-Friendly certification breastfed 50% less than those who gave birth in public hospitals. According to the authors, this discrepancy results from sociocultural and environmental factors, including the structure of healthcare systems and public breastfeeding policies. These factors influence the social valuation of breastfeeding, the dissemination of its importance for infant nutrition and development, and the preservation of breastfeeding duration^{27,28}.

In our findings, exclusive breastfeeding was most prevalent among women aged 21–26. By contrast, a study performed in Austria found that most breastfeeding women were in their 40s, differing from our results⁵. Regarding age group associations, we observed that early weaning during the first trimester was most prevalent among women aged 31–36. Supporting our findings, a quasi-experimental study conducted in Ethiopia²⁷ noted that parental age and education level were associated with breastfeeding discontinuation due to the perception of insufficient breast milk supply²⁸.

At six months, women who weaned early were more likely to have completed secondary or higher education, earned two or more minimum wages, and lived in rented housing. Conversely, a study different from ours²⁹ emphasized the importance of social support in increasing the likelihood of EBF by two to four times. Factors positively associated with EBF included higher education levels, high income, employment, and older maternal age.

Regarding ethnicity, our findings revealed that White women had a higher prevalence of early weaning in the first trimester compared to women of other ethnicities. In contrast, a study developed in southwestern Pennsylvania³⁰ found that Black participants were less likely to exclusively breastfeed. These negative outcomes are linked to historical, cultural, social, economic, political, and psychosocial factors, which disproportionately impact Black women in maintaining exclusive breastfeeding³¹.

In this study, we identified income as a significant factor influencing early weaning, with lower-income women demonstrating a higher prevalence ratio for early weaning across all analyzed time points. Our findings are consistent with those reported in another study³², which indicated that average

monthly household income was statistically associated with exclusive breastfeeding, enhancing the likelihood of breastfeeding.

We also observed that women with smoking partners exhibited a higher prevalence ratio for early weaning, corroborating findings from another study³³. Passive smoking caused by active smokers in the household was identified as a contributing factor to breastfeeding cessation. Exposure to secondhand smoke has been correlated with a reduced likelihood of breastfeeding³⁴.

Interestingly, our study revealed a higher prevalence of early weaning among women who had maternity leave. This finding aligns with a study undertaken in Ethiopia³⁵. Another study³⁶ reported that the likelihood of ceasing exclusive breastfeeding was statistically higher among women with shorter maternity leave durations (120 days)³⁶.

Studies executed in Brazil^{37,38} have indicated that early weaning during maternity leave is associated with multiple factors, including the use of pacifiers, infant hospitalization, parental education levels, maternal depressive symptoms, and cultural influences. These determinants have been identified as significant barriers to maintaining exclusive breastfeeding, emphasizing the need for interventions that provide maternal support and foster favorable conditions for continued breastfeeding. Maternity leave allows women to focus more on self-care and infant care, not only extending breastfeeding duration but also strengthening the mother-infant bond^{39,40}. However, our finding of a higher prevalence of breastfeeding cessation among women who utilized maternity leave points to potential gaps in support and guidance during this critical period. This result highlights the importance of reevaluating breastfeeding support policies and practices in both family and workplace environments, including culturally and socially tailored interventions.

The practical implications of this study underscore the necessity for targeted interventions to promote exclusive breastfeeding, particularly among vulnerable groups such as low-income women and those living in rented housing. Evidence indicates that factors like social support, economic conditions, and family behaviors, including partner smoking, significantly impact early weaning prevalence.

This study has some limitations. Certain data were self-reported by postpartum women, which may introduce recall bias. The sample was restricted to a single Baby-Friendly Hospital, limiting the generalizability of findings to other regional or institutional contexts. Subjective factors, such as maternal perceptions of received support and individual breastfeeding experiences, were not deeply explored, which could have enriched the understanding of encountered barriers. Additionally, the sample size influences statistical power, as larger participant numbers increase the ability to detect statistically significant differences. The sample size in this study may not have captured significant differences observed in studies with larger cohorts. Moreover, convenience sampling limits the generalizability of findings to the target population due to potential underrepresentation.

Despite these limitations, our findings revealed statistically significant associations, providing valuable insights into exclusive breastfeeding rates and factors contributing to early weaning during the first six months of life. Understanding the factors that negatively affect exclusive breastfeeding duration provides critical data for developing specific, individualized interventions to promote breastfeeding self-efficacy.

CONCLUSION

We conclude that although the rate of exclusive breastfeeding was high in the Baby-Friendly Hospital studied, early weaning was associated with factors such as age, ethnicity, income, housing, and

partner behavior. White women, those with lower incomes, renters, and those with smoking partners exhibited a higher prevalence of early weaning. These findings underscore the need for targeted support for vulnerable groups to promote exclusive breastfeeding up to six months. A curious result emerged regarding women who had access to maternity leave, as they showed a higher prevalence of discontinuing breastfeeding, thereby suggesting potential gaps in support and guidance provided to mothers during this critical period.

Ultimately, the reasons for ceasing breastfeeding are largely modifiable through holistic care, emphasizing the importance of breastfeeding support and addressing the personal needs of women during the prenatal period and the first six months postpartum. Considering our study's findings, we encourage further research focusing on the effectiveness of existing policies, programs, and global initiatives aimed at removing structural and social barriers that hinder breastfeeding success. Such efforts are essential to developing appropriate interventions that integrate the multifaceted factors of exclusive breastfeeding and provide comprehensive support for successful breastfeeding throughout the first six months of life.

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