unesp
UNIVERSIDADE ESTADUAL PAULISTA
"JÚLIO DE MESQUITA FILHO"
Instituto de Ciência e Tecnologia
Campus de São José dos Campos

Original Article DOI: https://doi.org/10.4322/bds.2026.e5033

Breastfeeding knowledge and profile of pregnant women: a cross-sectional study in Primary Health Care

Conhecimento e perfil de gestantes sobre aleitamento materno: estudo transversal na Atenção Primária à Saúde

Vanessa dos Santos BRUM[1], Isabelle Amorim de OLIVEIRA[1], Jonas de Almeida RODRIGUES[1]*

1 - Universidade Federal do Rio Grande do Sul, Faculdade de Odontologia, Departamento de Cirurgia e Ortopedia. Porto Alegre, RS, Brasil.

How to cite: Brum VS, Oliveira IA, Rodrigues JA. Breastfeeding knowledge and profile of pregnant women: a cross-sectional study in Primary Health Care. Braz. Dent. Sci. 2026;29:e5033. https://doi.org/10.4322/bds.2026.e5033

ABSTRACT

Objective: To describe the profile, knowledge, and prior experiences related to breastfeeding among pregnant women in a southern Brazilian city. **Material and Methods:** This cross-sectional study included 106 pregnant women aged 16–45 years attending dental prenatal consultations at three public healthcare units. Data were collected between September 2021 and November 2024 using a standardized questionnaire with 19 closed-ended questions on sociodemographic characteristics, breastfeeding knowledge, previous experiences, and intentions. Descriptive analyses and Chi-square tests were performed. **Results:** Participants were mostly adult women with completed secondary education and family income above two minimum wages. While 98.1% intended to breastfeed, only 13.3% reported receiving professional guidance. Although 54.7% correctly identified the ideal duration of exclusive breastfeeding, 33.1% believed other liquids should be offered during this period. Knowledge about breastfeeding's impact on breathing and oral development was limited. Intentions to offer pacifiers (55.7%) and bottles (44.3%) were frequent. No significant associations were observed between professional guidance and the evaluated variables. **Conclusion:** Pregnant women showed strong intentions to breastfeed, but knowledge gaps remain and professional counseling is limited. These findings highlight the need to strengthen breastfeeding promotion during prenatal care, reinforcing the role of dentists in multidisciplinary healthcare teams.

KEYWORDS

Breast feeding; Health knowledge, attitudes, practice; Pregnant women; Prenatal care; Primary Health Care.

RESUMO

Objetivo: Descrever o perfil, o conhecimento e as experiências prévias relacionadas à amamentação entre gestantes de uma cidade do sul do Brasil. Materiais e Métodos: Este estudo transversal incluiu 106 gestantes com idades entre 16 e 45 anos que realizaram consulta odontológica de pré-natal em três unidades públicas de saúde. Os dados foram coletados entre Setembro de 2021 e Novembro de 2024 por meio de um questionário padronizado com 19 questões fechadas, abordando características sociodemográficas, conhecimento sobre aleitamento materno, experiências prévias e intenções. Foram realizadas análises descritivas e teste do qui-quadrado. Resultados: As participantes eram, predominantemente, mulheres adultas, com ensino médio completo e renda familiar superior a dois salários mínimos. Embora 98,1% tenham relatado intenção de amamentar, apenas 13,3% receberam orientação profissional. Apesar de 54,7% terem identificado corretamente a duração ideal do aleitamento materno exclusivo, 33,1% acreditavam que outros líquidos deveriam ser oferecidos nesse período. O conhecimento sobre o impacto da amamentação na respiração e no desenvolvimento oral foi limitado. As intenções de oferecer chupeta (55,7%) e mamadeira (44,3%) foram frequentes. Não foram observadas associações significativas entre a orientação profissional e as variáveis avaliadas. Conclusão: as gestantes demonstraram forte intenção de amamentar, porém persistem lacunas no conhecimento, além disso, a orientação profissional ainda é limitada. Esses achados ressaltam a necessidade de fortalecer a promoção do aleitamento materno no pré-natal, com ênfase no papel do cirurgião-dentista nas equipes multiprofissionais de saúde.

PALAVRAS-CHAVE

Aleitamento Materno; Conhecimentos, Atitudes e Prática em Saúde; Gestantes; Cuidado Pré-Natal; Atenção Primária à Saúde.

This is an Open Access article distributed under the terms of the Creative Commons Attribution license (https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

The World Health Organization recommends exclusive breastfeeding for 6 months [1], and the literature is extensive regarding its benefits for both mother and child. In children, studies indicate that breastfeeding provides protection against infections and malocclusion, improved cognitive development, and a reduced risk of overweight and diabetes [2]. For women, breastfeeding provides protection against breast and ovarian cancer and reduces the risk of type 2 diabetes mellitus [3]. Additionally, it has been potentially associated with postpartum weight loss [4] and cardiovascular health [5]. The prevalence of exclusive breastfeeding among infants under six months in Brazil was 45.8% [6], not meeting the global target of 50% for this age group.

In Dentistry, important outcomes are associated with breastfeeding. The exercise involved in breast milk removal promotes the proper development of oral structures and the establishment of nasal breathing. In this way, systematic reviews have shown that breastfeeding can be considered a protective factor against malocclusions [7,8]. The literature also supports the association between breastfeeding and breathing patterns. Based on a systematic review with moderate evidence, it was observed that the frequency of nasal breathing increased with the duration of breastfeeding [9]. Additionally, there was a reduction in the prevalence of mouth breathing patterns in children breastfed for up to 2 years [10]. Breastfeeding can also provide effective protection for children and adolescents against sleep-disordered breathing [11]. Thus, the entire masticatory apparatus is influenced by an oral function that begins with breastfeeding.

Pregnancy is a period of vulnerability for oral health, during which the incidence of oral diseases may increase, potentially leading to negative effects for both the mother and the infant [12]. Furthermore, a recent study showed that pregnant women with dental anxiety and those with gingivitis were more likely to report poorer OHRQoL [13], reinforcing the importance of promoting oral health and psychological well-being during this period. During pregnancy, women are also more receptive to information and changes that may benefit the baby. In this sense, it represents an important moment for implementing educational and preventive oral health actions, which can lead mothers to establish good hygiene and dietary habits from the very beginning of the child's life [14].

Maternal knowledge can positively influence breastfeeding practices [15,16]. A study with approximately 300 pregnant women showed that the level of knowledge about breastfeeding was moderate and may influence both the choice of feeding method and the duration of exclusive breastfeeding [17]. A cross-sectional study conducted in northern Brazil also found that a high proportion of mothers lacked basic knowledge about infant feeding, which may contribute to a shorter duration of exclusive breastfeeding, early weaning, and the inappropriate introduction of foods and beverages [18]. Therefore, strategies to increase knowledge are relevant.

This study is part of a larger research project aimed at evaluating the effect of additional specific guidance on breastfeeding, considering respiratory and occlusal aspects. In Brazil, dental consultations are part of prenatal care in Primary Health Care, so the dentist plays an important role in promoting breastfeeding. Thus, understanding the particularities of pregnant women, their prior knowledge, and beliefs in different regions is crucial for the development of policies and strategies that can be effective in promoting breastfeeding. Therefore, the aim of this study is to understand the profile of pregnant women in a city in southern Brazil, as well as their knowledge and previous experiences with breastfeeding.

MATERIALS & METHODS

Study design and participants

This is a cross-sectional study and was reported in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines. The data are part of a larger research project aimed at evaluating the effect of additional specific guidance on breastfeeding, considering respiratory and occlusal aspects. Within this broader project, the present study corresponds to the baseline phase, conducted prior to the implementation of the educational intervention. The project was approved by the Municipal Center for Education in Public Health (NUMESC), the Research Committee of the School of Dentistry (COMPESQ), and the Research Ethics Committee of the Federal University of Rio Grande do Sul (UFRGS) under approval number CAAE 49829221.1.0000.5347.

The study was conducted in three healthcare units, selected for convenience, in Novo Hamburgo, a city in southern Brazil. According to the 2022

Brazilian Census (IBGE), the city has a population of 227,646 inhabitants, is predominantly urban, and presents relatively favorable socioeconomic indicators [19]. Primary healthcare services are provided through a structured network under the Brazilian Unified Health System (SUS), including prenatal care offered in Primary Health Care units.

All pregnant women who attended prenatal dental consultations at the selected healthcare units during the study recruitment period and agreed to participate and signed the Informed Consent Form were included in the study. Accordingly, a total of 106 pregnant women aged 16 to 45 years were included in the sample. HIV-positive women would have been excluded due to specific World Health Organization recommendations regarding breastfeeding in this population, particularly depending on the availability of safe alternatives to breast milk and appropriate clinical management [20]; however, no such cases were identified, and there were no dropouts or refusals.

Data collection

Data were collected between September 2021 and November 2024 by three dentists, each assigned to one of the healthcare units mentioned. Prior to data collection, the dentists underwent a standardized training conducted by the principal investigator. The training included a detailed explanation of the study objectives, step-by-step instructions for questionnaire administration, clarification of all questionnaire items, and guidance on participant approach and informed consent procedures, and was conducted in a single session lasting approximately 2 hours. A written instruction manual was provided to ensure uniformity in data collection across the three healthcare units.

A single, standardized questionnaire containing 19 closed-ended questions was used to gather information on maternal age, gestational period, socioeconomic profile, breastfeeding intentions, previous experiences, and pregnant women's knowledge about breastfeeding. The questionnaire was specifically developed for this study based on previously published instruments addressing breastfeeding knowledge and practices, as well as on topics considered relevant by the research team, and did not undergo formal validation or pilot testing, as its purpose was descriptive.

Variables

The study variables were obtained through a structured questionnaire and included sociodemographic, gestational, and breastfeeding-related data. Sociodemographic variables were maternal age, marital status, educational level, household income, and number of residents in the household. Gestational variables included gestational age and parity. These variables were included due to their potential influence on breastfeeding-related outcomes.

Breastfeeding-related outcomes included intention to breastfeed, previous experience with breastfeeding, knowledge of the recommended duration of exclusive breastfeeding, beliefs regarding the offer of other liquids during this period, and perception of ideal feeding frequency. Knowledge about breastfeeding's impact on facial development and breathing was also assessed, as well as the intention to use pacifiers and baby bottles. The main exposure variable was whether the participant had received professional guidance on breastfeeding, and who provided it. No clinical diagnostic criteria were applied, as all data were self-reported.

Data analysis

Descriptive statistics were used to characterize the sample according to sociodemographic, gestational, and breastfeeding-related variables. Categorical variables were presented as absolute and relative frequencies. To evaluate possible associations between the main exposure variable—receipt of professional guidance on breastfeeding—and other categorical outcomes, the Chi-Square test was applied. A significance level of 5% ($p < 0.05$) was adopted. All analyses were performed using IBM SPSS Statistics for Windows, version 22.0 (IBM Corp., Armonk, NY, USA).

RESULTS

All 106 participants completed the questionnaire and were included in the study. Table I presents data on sociodemographic and gestational characteristics. The sample consisted predominantly of adult women aged between 20 and 35 years (74.5%), most of whom were in the early stages of pregnancy, with 41.5% in the first trimester and 42.5% in the second trimester. This distribution indicates that the majority of participants were receiving prenatal care during the first or second trimesters, suggesting timely engagement with health services.

With regard to obstetric history, a considerable number of participants were multigravidae (55.6%), although a substantial portion were experiencing their first pregnancy. Most women reported being either single (50.9%) or married (45.3%), with few identifying as separated or divorced (3.8%), reflecting a relatively stable marital profile within the group.

The educational background revealed a predominance of women who had completed or were pursuing secondary education (53.8%), whereas higher education attainment was less frequent. In terms of socioeconomic status, most participants reported household incomes above two minimum wages (56.6%). Finally, the household composition predominantly comprised smaller family units, with 62.3% of women living with up to three other individuals, consistent with a nuclear family structure pattern.

Table I - Sociodemographic and gestational characteristics

Variable	N	%
Maternal Age		
16 to 19 years old	12	11.32
20 to 23 years old	26	24.53
24 to 27 years old	24	22.64
28 to 31 years old	16	15.09
32 to 35 years old	13	12.26
+ 36	15	14.15
Gestation age		
First trimester	44	41.51
Second trimester	45	42.45
Third trimester	17	16.04
Number of pregnancies		
First pregnancy	46	43.40
Multigravida	60	55.60
Marital Status		
Single	54	50.94
Married	48	45.28
Divorced	4	3.77
Widow	0	0
Education level		
Complete higher education	8	7.55
Incomplete higher education	10	9.43
Complete secondary education	43	40.57
Incomplete secondary education	14	13.21
Complete fundamental	16	15.09
Incomplete fundamental	15	14.15
Household Income		
< 1 minimum wage	14	13.21
Between 1 and 2 minimum wages	32	30.19
>2 minimum wages	60	56.60
Number of residents in the household		
Up to 2 people	37	34.91
3 people	29	27.36
4 people	24	22.64
5 people or more	16	15.09

Note: Base salary refers to the Brazilian minimum wage, standardized according to the official value in force in 2024.

Table II summarizes the participants' previous experiences and knowledge regarding breastfeeding. Among multiparous women, most reported previous breastfeeding experience, although the duration varied substantially, ranging from less than 3 months (14.0%) to more than 24 months (24.6%), suggesting differences in maternal practices and circumstances. Nearly all pregnant women expressed a strong intention to breastfeed (98.1%), reflecting a highly favorable attitude toward this practice.

Despite this positive intention, professional guidance on breastfeeding was limited, as only 13.3% of participants reported having received information from healthcare professionals. Among those who received guidance, nurses were the most commonly cited professionals (57.1%), followed by physicians (28.6%) and dentists (14.3%). This finding indicates a gap in prenatal counseling, highlighting the need for broader engagement of the healthcare team in breastfeeding education.

Knowledge about exclusive breastfeeding duration was largely consistent with current recommendations, as most women identified six months as the ideal period (54.7%). However, uncertainty remained among a subset of participants, with 20.8% unable to specify the recommended duration. Likewise, although most women recognized that no additional liquids should be offered to infants during exclusive breastfeeding (56.6%), misconceptions persisted, as 33.1% believed that other liquids should be offered during this period.

Table II - Previous experiences and knowledge about breastfeeding

Variable	n	%
Reported breastfeeding duration of the most recent child		
< 3 months	8	14.04
Between 3 and 6 months	18	31.58
Between 6 and 12 months	6	10.53
Between 12 and 24 months	11	19.30
>24 months	14	24.56
Intention to breastfeed		
Yes	104	98.11
No	1	0.94
Don't know	1	0.94
Have you received any information about breastfeeding from healthcare professionals?		
Yes	14	13.33
No	91	86.67
Which Professional		
Dentist	2	14.29
Nurse	8	57.14
Physician	4	28.57
Nurse technician	0	0
Others	0	0

Table II - Continued...

Variable	n	%
Do you know how long you should exclusively breastfeed your baby?		
3 months	5	4.72
6 months	58	54.72
1 year	21	19.81
Don't know	22	20.75
During this period, do you believe that the baby should receive other liquids such as tea, water or formula?		
Yes	33	33.13
No	60	56.60
Don't know	13	12.26
What is the ideal breastfeeding frequency?		
3 in 3 hours	37	34.91
6 in 6 hours	3	2.83
Free demand	66	62.26
Do you believe that breastfeeding is related to the baby's facial development?		
Yes	51	48.11
No	12	11.32
Don't know	43	40.57
Do you believe that breastfeeding can interfere with the baby's breathing?		
Yes	56	44.34
No	22	45.28
Don't know	28	10.38
Do you intend to offer your baby a bottle?		
Yes	47	44.33
No	48	45.28
Don't know	11	10.38
Do you intend to offer a pacifier to the baby?		
Yes	59	55.66
No	41	38.68
Don't know	6	5.66

When questioned about breastfeeding frequency, most participants correctly associated it with on-demand feeding (62.3%), although some still believed it should occur at fixed intervals, such as every three hours (34.9%). Awareness of the developmental benefits of breastfeeding was less widespread, as 48.1% of participants acknowledged its relevance for facial growth and 44.3% for respiratory function, indicating a partial understanding of its broader health implications.

Responses regarding the use of bottles and pacifiers revealed divergent opinions. The participants were almost evenly divided between those who intended to offer bottles (44.3%) and those who did not (45.3%). However, most participants planned to use pacifiers (55.7%), underscoring the need for further guidance on the potential effects of these habits on breastfeeding continuity and orofacial development.

The Chi-Square test was performed to assess possible associations between receiving professional guidance and breastfeeding-related knowledge and intentions. No statistically significant associations were observed for any of the evaluated variables, including knowledge about breastfeeding and intentions to offer pacifiers or baby bottles (all $p > 0.05$). The results are presented in Table III.

Table III - Association Between Professional Guidance and Breastfeeding-Related Variables

Variable	Category	Professional Guidance (n/%)		p-value
		No	Yes	
Belief: Ideal breastfeeding frequency	Every 3 hours	32 (35,2%)	5 (35.7%)	0.7877
	Every 6 hour	3 (3.3%)	0 (0%)	
	On-demand	56 (61.5%)	9(64.3%)	
Belief: breastfeeding affects breathing	Yes	47 (51.6%)	9 (64.3%)	0.5528
	No	19 (20.9%)	3 (21.4%)	
	Don't know	25 (27.5%)	2 (14.3%)	
Belief: breastfeeding affects facial development	Yes	42 (46.2%)	9 (64.3%)	0.2539
	No	12 (13.2%)	0 (0%)	
	Don't know	37 (40.7%)	5 (35.7%)	
Intention to offer baby bottle	Yes	41 (45.1%)	6 (42.9%)	0.3233
	No	39 (42.9%)	8 (57.1%)	
	Don't know	11 (12.1%)	0 (0%)	
Intention to offer pacifier	Yes	50 (54.9%)	8 (57.1%)	0.2806
	No	37 (40.7%)	4 (28.6%)	
	Don't know	4 (4.4%)	2 (14.3%)	

Chi-square test; significance level set at $p < 0.05$.

DISCUSSION

The main objective of this study was to describe the profile of pregnant women receiving prenatal care at three Basic Health Units in a city in southern Brazil, as well as their knowledge and experiences related to breastfeeding, and to assess whether professional guidance influenced these variables. Although no statistically significant associations were identified, several relevant aspects warrant discussion.

The maternal age of the sample (predominantly between 20 and 35 years) can be considered a positive aspect, since ages under 15 and over 35 are considered gestational risk factors [21]. In addition, younger maternal age has been associated with shorter breastfeeding duration [22]. Prenatal care and health guidance should therefore begin as early as possible, preferably in the first trimester of pregnancy [21]. In the present study, most participants were in the first (41.51%) or second trimester (42.45%), which may facilitate early access to health information.

On the other hand, during early pregnancy, women may prioritize information related to pregnancy itself rather than postpartum practices such as breastfeeding. As breastfeeding is a practical experience that occurs after childbirth, interest in and retention of information on this topic may vary according to gestational stage. A systematic review has shown that antenatal breastfeeding education alone does not consistently lead to higher breastfeeding initiation or longer duration [23]. This dynamic may partially explain the knowledge gaps observed and reinforces the importance of repeated, stage-appropriate breastfeeding counseling throughout prenatal care.

Low educational attainment is considered an unfavorable characteristic during pregnancy. A descriptive study that aimed to assess the knowledge of postpartum women about breastfeeding in a maternity setting identified a positive association between knowledge and family income [24]. As also observed in a recent study that evaluated 98 mothers of full-term infants, maternal education was associated with exclusive breastfeeding at six months, with higher educational levels being related to more favorable outcomes. Additionally, family income was associated with the introduction of complementary foods, with lower income increasing the likelihood of early introduction [25]. In the present sample, most pregnant women had completed secondary education, and the average family income was above two Brazilian minimum wages, suggesting socioeconomic characteristics that are generally favorable to breastfeeding.

WHO and the Brazilian Ministry of Health recommend exclusive breastfeeding for six months, with continued breastfeeding alongside complementary foods until two years of age or beyond. The vast majority of pregnant women reported exclusive breastfeeding for six months or more, while a small proportion reported breastfeeding for less than three months (14.4%). However, more than one-third of participants believed that infants should receive other liquids during this period (33.1%), indicating an incomplete understanding of this recommendation. In this context, providing adequate guidance to pregnant women is essential, as the early introduction of other liquids may reduce breast milk intake and production, negatively affecting breastfeeding duration [26] and increasing the child's risk of infections [27].

It is known that several factors may contribute to early weaning, such as returning to work, pacifier use, nipple trauma, or pain [28]. In this context, opinions were divided regarding the intention to use a baby bottle (44.3% vs. 45.3%). However, more than half of the pregnant women intended to offer a pacifier (55.7%), which is relevant given its potential influence on the development of malocclusion [29], as well as its negative impact on breastfeeding. Previous research has demonstrated that the use of pacifiers and/or bottle-feeding is associated with unfavorable behaviors during breastfeeding [30].

It is noteworthy that almost all the pregnant women expressed the intention to breastfeed; however, more than 80% reported not having received any professional guidance on breastfeeding. This finding highlights a gap in breastfeeding promotion within the healthcare system. As widely discussed, healthcare professionals play a key role in supporting and encouraging breastfeeding. Among the small portion of pregnant women who did receive information, the main professional mentioned was the nurse—often the first and most frequent point of contact for pregnant women in Primary Care, and therefore in a privileged position to provide appropriate guidance. However, it is important to emphasize that care actions within the Brazilian Unified Health System (SUS) should be carried out in a multidisciplinary context, and health promotion is a responsibility shared by the entire healthcare team.

Some limitations of this study should be acknowledged. The cross-sectional design precludes causal inferences, and the use of convenience sampling may have introduced selection bias and limited the representativeness of the findings. Differences related to parity, which were not analyzed separately, may also have influenced breastfeeding knowledge and experiences. In addition, the use of a non-validated questionnaire and self-reported information may have affected the accuracy of the responses. Therefore, caution is warranted when extrapolating these results to other settings.

Nevertheless, the results underscore the importance of strengthening breastfeeding promotion during the prenatal period. Dentists, as members of multidisciplinary Primary Care teams, can play a meaningful role by supporting pregnant women, clarifying doubts, and reinforcing the benefits of breastfeeding for child development. Future research should include more socioeconomically diverse populations to better identify potential barriers to breastfeeding. Longitudinal studies could further clarify the impact of prenatal counseling on actual breastfeeding practices, while also exploring women's perceptions and challenges. Additionally, investigating the specific roles of different healthcare professionals may help strengthen multidisciplinary strategies within Primary Care.

CONCLUSION

Although most pregnant women reported positive intentions toward breastfeeding, important gaps in knowledge were identified—especially regarding exclusive breastfeeding and its impact on breathing and oral development. Despite the potential of prenatal care as a space for health education, few participants received professional guidance, and no statistically significant associations were found between receiving guidance and the variables analyzed.

These findings highlight the importance of strengthening prenatal breastfeeding education through multidisciplinary approaches. Future studies with more diverse populations and longitudinal designs are recommended to better evaluate the impact of prenatal counseling on breastfeeding outcomes.

Acknowledgements

The authors would like to thank the colleagues who contributed to the data collection process (Camila G. Duarte and Vinicius M. Paczkowski), as well as all the pregnant women who kindly agreed to participate and complete the questionnaire. Their collaboration was essential to the development of this study.

Data availability

The datasets generated and analyzed during the current study are not publicly available due to participant privacy but are available from the corresponding author on reasonable request.

Author's Contributions

VSB: Conceptualization, Data Curation, Formal Analysis, Investigation, Writing – Original Draft. IAO: Formal Analysis, Writing – Review & Editing. JAR: Conceptualization, Supervision, Writing – Review & Editing.

Conflict of Interest

The authors have no conflicts of interest to declare.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Regulatory Statement

This study was conducted in accordance with all the provisions of the local human subjects oversight committee guidelines and policies of the Federal University of Rio Grande do Sul (UFRGS), Brazil. This study protocol was reviewed and approved by the Municipal Center for Education in Public Health (NUMESC), the Research Committee of the School of Dentistry (COMPESQ), and the Research Ethics Committee of the Federal University of Rio Grande do Sul (UFRGS), approval number CAAE 49829221.1.0000.5347.

REFERENCES

1. Kramer MS, Kakuma R. Optimal duration of exclusive breastfeeding. Cochrane Database Syst Rev. 2012;2012(8):CD003517. http://doi.org/10.1002/14651858.CD003517.pub2. PMid:22895934.
2. Victora CG, Bahl R, Barros AJD, França GVA, Horton S, Krasevec J, et al, and the Lancet Breastfeeding Series Group. Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect. Lancet. 2016;387(10017):475-90. http://doi.org/10.1016/S0140-6736(15)01024-7. PMid:26869575.

3. Chowdhury R, Sinha B, Sankar MJ, Taneja S, Bhandari N, Rollins N, et al. Breastfeeding and maternal health outcomes: a systematic review and meta-analysis. Acta Paediatr. 2015;104(467):96-113. http://doi.org/10.1111/apa.13102. PMid:26172878.

4. Neville CE, McKinley MC, Holmes VA, Spence D, Woodside JV. The relationship between breastfeeding and postpartum weight change-a systematic review and critical evaluation. Int J Obes. 2014;38(4):577-90. http://doi.org/10.1038/ijo.2013.132. PMid:23892523.

5. Nguyen B, Jin K, Ding D. Breastfeeding and maternal cardiovascular risk factors and outcomes: a systematic review. PLoS One. 2017;12(11):e0187923. http://doi.org/10.1371/journal.pone.0187923. PMid:29186142.

6. UFRJ: Universidade Federal do Rio de Janeiro. Aleitamento materno: prevalência e práticas entre crianças brasileiras menores de 2 anos: ENANI 2019. Rio de Janeiro: UFRJ; 2021.

7. Abate A, Cavagnetto D, Fama A, Maspero C, Farronato G. Relationship between breastfeeding and malocclusion: a systematic review of the literature. Nutrients. 2020;12(12):1-15. http://doi.org/10.3390/nu12123688. PMid:33265907.

8. Peres KG, Cascaes AM, Nascimento GG, Victora CG. Effect of breastfeeding on malocclusions: a systematic review and meta-analysis. Acta Paediatr. 2015;104(467):54-61. http://doi.org/10.1111/apa.13103. PMid:26140303.

9. Park EH, Kim JG, Yang YM, Jeon JG, Yoo J, Kim JK, et al. Association between breastfeeding and childhood breathing patterns: a systematic review and meta-analysis. Breastfeed Med. 2018;13(4):240-7. http://doi.org/10.1089/bfm.2017.0222. PMid:29608327.

10. Savian CM, Bolsson GB, Botton G, Antoniazzi RP, Rocha RO, Zanatta FB, et al. Do breastfed children have a lower chance of developing mouth breathing? A systematic review and meta-analysis. Clin Oral Investig. 2021;25(4):1641-54. http://doi.org/10.1007/s00784-021-03791-1. PMid:33506425.

11. Storari M, Yanez-Regonesi F, Denotti G, Paglia L, Viscuso D. Breastfeeding and sleep-disordered breathing in children:systematic review and proposal of underlying interaction models. Eur J Paediatr Dent. 2021;22(4):309-13. http://doi.org/10.23804/ejpd.2021.22.04.10. PMid:35034467.

12. Hartnett E, Haber J, Krainovich-Miller B, Bella A, Vasilyeva A, Lange Kessler J. Oral health in pregnancy. J Obstet Gynecol Neonatal Nurs. 2016;45(4):565-73. http://doi.org/10.1016/j.jogn.2016.04.005. PMid:27281467.

13. Araujo G, Casarin M, Savian CM, Emmanuelli B, Tomazoni F, Santos BZ. Dental anxiety and oral health-related quality of life among pregnant women: a cross-sectional study. Braz Dent Sci. 2025;28(2):e4586. http://doi.org/10.4322/bds.2025.e4586.

14. Reis DM, Pitta DR, Ferreira HMB, Jesus MCP, Moraes MEL, Soares MG. Educação em saúde como estratégia de promoção de saúde bucal em gestantes. Cien Saude Colet. 2010;15(1):269-76. http://doi.org/10.1590/S1413-81232010000100032. PMid:20169253.

15. Akinyinka M, Olatona F, Oluwole E. Breastfeeding knowledge and practices among mothers of children under 2 years of age living in a military barrack in Southwest Nigeria. Int J MCH AIDS. 2016;5(1):1-13. http://doi.org/10.21106/ijma.79. PMid:27622007.

16. Gewa CA, Chepkemboi J. Maternal knowledge, outcome expectancies and normative beliefs as determinants of cessation of exclusive breastfeeding: a cross-sectional study in rural Kenya. BMC Public Health. 2016;16(1):243. http://doi.org/10.1186/s12889-016-2907-2. PMid:26957007.

17. Suárez-Cotelo MC, Movilla-Fernández MJ, Pita-García P, Arias BF, Novío S. Breastfeeding knowledge and relation to prevalence. Rev Esc Enferm USP. 2019;53:e03433. http://doi.org/10.1590/s1980-220x2018004503433. PMid:30843928.

18. Pizzatto P, Dalabona CC, Correa ML, Neumann NA, Cesar JA. Maternal knowledge on infant feeding in São Luís, Maranhão, Brazil. Rev Bras Saúde Mater Infant. 2020;20(1):169-79. http://doi.org/10.1590/1806-93042020000100010.

19. IBGE: Brazilian Institute of Geography and Statistics. Population Census: Novo Hamburgo (RS) [Internet]. Rio de Janeiro: IBGE; 2022 [cited 2026 Jan 31]. Available from: https://www.ibge.gov.br/cidades-e-estados/rs/novo-hamburgo

20. WHO: World Health Organization. Guidelines on HIV and infant feeding 2010: principles and recommendations for infant feeding in the context of HIV and a summary of evidence. Geneva: WHO; 2010.

21. Brasil. Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Ações Programáticas Estratégicas. Área Técnica de Saúde da Mulher. Pré-natal e Puerpério: atenção qualificada e humanizada – Manual técnico. Brasília: Ministério da Saúde; 2005.

22. Mariano G. Socorro, eu não sei amamentar! 2. ed. São Paulo: Jefte Livros; 2012.

23. Lumbiganon P, Martis R, Laopaiboon M, Festin MR, Ho JJ, Hakimi M. Antenatal breastfeeding education for increasing breastfeeding duration. Cochrane Database Syst Rev. 2016;12(12):CD006425. http://doi.org/10.1002/14651858.CD006425.pub4. PMid:27922724.

24. Boff ADG, Paniagua LM, Scherer S, Goulart BNG. Aspectos socioeconômicos e conhecimento de puérperas sobre o aleitamento materno. Audiol Commun Res. 2015;20(2):141-5. http://doi.org/10.1590/S2317-64312015000200001517.

25. Gomes SRM, Silva MSS, Motta AR, Las Casas EB, Furlan RMMM. Fatores relacionados ao desmame precoce em bebês nascidos a termo em uma maternidade pública. CoDAS. 2024;36(5):e20240030. http://doi.org/10.1590/2317-1782/20242024030pt. PMid:39109757.

26. Stern J, Funkquist EL, Grandahl M. The association between early introduction of tiny tastings of solid foods and duration of breastfeeding. Int Breastfeed J. 2023;18(1):4. http://doi.org/10.1186/s13006-023-00544-6. PMid:36647140.

27. Smith HA, Becker GE. Early additional food and fluids for healthy breastfed full-term infants. Cochrane Database Syst Rev. 2016;2016(8):CD006462. http://doi.org/10.1002/14651858.CD006462.pub4. PMid:27574798.

28. Alvarenga SC, Castro DS, Leite FMC, Brandão MAG, Zandonade E, Primo CC. Fatores que influenciam o desmame precoce. Aquichan. 2017;17(1):93-103. http://doi.org/10.5294/aqui.2017.17.1.9.

29. Ito C, Sato VCB, Scavone-Junior H, Garib DG, Ferreira RI. Associação entre hábitos de sucção não nutritivos e as relações oclusais ântero-posteriores em crianças nipo-brasileiras. Braz Dent Sci. 2008;11(1):19-26. http://doi.org/10.14295/bds.2008.v11i1.191.

30. Batista CLC, Ribeiro VS, Nascimento MDSB, Rodrigues VP. Association between pacifier use and bottle-feeding and unfavorable behaviors during breastfeeding. J Pediatr (Rio J). 2018;94(6):596-601. http://doi.org/10.1016/j.jped.2017.10.005. PMid:29136496.

Jonas de Almeida Rodrigues
(Corresponding address)
Universidade Federal do Rio Grande do Sul, Faculdade de Odontologia, Departamento de Cirurgia e Ortopedia, Porto Alegre, RS, Brasil.
Email: jorodrigues@ufrgs.br

Editor-in-chief: Sergio Eduardo de Paiva Gonçalves
Section editor: Cristiane Meira Assunção

Date submitted: 2025 Oct 19
Accept submission: 2026 Mar 04