Digital Intervention in the Promotion of Breastfeeding Among Postpartum Women: A Randomized Clinical Trial

Intervenção Digital na Promoção do Aleitamento Materno Entre Puérperas: Um Ensaio Clínico Randomizado

Intervención Digital en la Promoción de la Lactancia Materna en Puérperas: Un Ensayo Clínico Aleatorizado

RESUMO

Objetivo: O estudo teve como objetivo analisar o efeito das mídias digitais na duração do aleitamento materno. **Método:** Trata-se de um ensaio clínico com 173 puérperas em uma maternidade, com grupos intervenção e controle. O grupo intervenção recebeu informações semanais sobre amamentação, por 3 meses, via Whatsapp. A prática da amamentação foi avaliada no 1° e 3° mês por entrevistas. **Resultado:** Aos 30 dias pós-parto, o grupo intervenção apresentou maior intenção de continuar amamentando em comparação ao grupo controle (p = 0,017). Aos três meses, observou-se maior prevalência de aleitamento materno exclusivo no grupo intervenção (66,7% vs. 40,6%; p = 0,031; RR = 1,64; IC95%: 1,01–2,64). Não foram encontradas diferenças estatisticamente significativas quanto ao uso de chupeta ou mamadeira. **Conclusão:** A intervenção educativa participativa, realizada por profissionais de saúde, com uso de mídias digitais, mostrou-se eficaz em aumentar a prevalência de aleitamento materno exclusivo.

DESCRITORES: Educação em saúde; Saúde digital; Puerpério; Aleitamento materno; Ensaio clínico controlado.

ABSTRACT

Objective: The aim of this study was to analyze the effect of digital media on the duration of breastfeeding. **Method:** This was a clinical trial conducted with 173 postpartum women in a maternity hospital, assigned to intervention and control groups. The intervention group received weekly breastfeeding information via WhatsApp over a three-month period. Breastfeeding practices were assessed through interviews conducted at one and three months postpartum. **Result:** At 30 days postpartum, the intervention group showed a higher intention to continue breastfeeding compared to the control group (p = 0.017). At three months, the prevalence of exclusive breastfeeding was significantly higher in the intervention group (66.7% vs. 40.6%; p = 0.031; RR = 1.64; 95% CI: 1.01–2.64). No statistically significant differences were observed between groups regarding pacifier or bottle use. **Conclusion:** The participatory educational intervention, conducted by health professionals using digital media, was effective in increasing the prevalence of exclusive breastfeeding.

DESCRIPTORS: Health education; Digital health; Puerperium; Breastfeeding; Controlled clinical trial.

RESUMEN

Objetivo: El estudio tuvo como objetivo analizar el efecto de las redes digitales en la duración de la lactancia materna. **Método:** Se trata de un ensayo clínico con 173 puérperas en una maternidad, distribuidas en grupos de intervención y control. El grupo de intervención recibió información semanal sobre lactancia materna, durante 3 meses, a través de WhatsApp. La práctica de lactancia fue evaluada en el primer y tercer mes mediante entrevistas. **Resultado:** A los 30 días posparto, el grupo de intervención presentó una mayor intención de continuar amamantando en comparación con el grupo control (p = 0,017). A los tres meses, se observó una mayor prevalencia de lactancia materna exclusiva en el grupo de intervención (66,7% vs. 40,6%; p = 0,031; RR = 1,64; IC95%: 1,01–2,64). No se encontraron diferencias estadísticamente significativas en cuanto al uso de chupete o biberón. **Conclusión:** La intervención educativa participativa, realizada por profesionales de la salud y mediante el uso de redes digitales, demostró ser eficaz para aumentar la prevalencia de la lactancia materna exclusiva.

DESCRIPTORES: Educación en salud; Salud digital; Puerperio; Lactancia materna; Ensayo clínico controlado.

DOI: 10.36489/saudecoletiva.2025v16i103p18312-18329

RECEIVED: 11/07/2025 **APPROVED:** 11/21/2025

How to cite this article: Bezerra MKA, Cirino AG, Assunção ML, Ferreira HS, Cáceres MCS, Andrade MIS, Badue GS. Digital Intervention in the Promotion of Breastfeeding Among Postpartum Women: A Randomized Clinical Trial Saúde Coletiva (Brazilian Edition) [Internet]. 2025 [cited year month day];16(103):18312-18329. Available from: DOI: 10.36489/saudecoletiva.2025v16i103p18312-18329

Myrtis Katille de Assunção Bezerra
PhD in Public Health from the Oswaldo Cruz Foundation (Fiocruz/PE), Aggeu Magalhães Institute. Adjunct Professor at the Federal University of Alagoas.
ORCID: https://orcid.org/0000-0002-4315-9623

Adonay Guedes Cirino
Multiprofessional Resident in Intensive Care at the Federal University of São Paulo (UNIFESP/SP).
ORCID: https://orcid.org/0000-0002-8642-6680

Monica Lopes de Assunção
PhD in Child and Adolescent Health from the Federal University of Pernambuco (UFPE). Adjunct Professor at the Federal University of Alagoas.
ORCID: https://orcid.org/0000-0003-2985-9890

Haroldo da Silva Ferreira
PhD in Public Health from the National School of Public Health (ENSP/Fiocruz). Adjunct Professor at the Federal University of Alagoas.
ORCID: https://orcid.org/0000-0002-1789-3138

Marilia Conceição de Souza Cáceres
PhD in Sciences from the University of Cádiz (Spain). Adjunct Professor at the Federal University of Alagoas. Adjunct Professor at the Federal University of Recôncavo da Bahia (UFRB).
ORCID: https://orcid.org/0000-0002-8453-4661

Maria Izabel Siqueira de Andrade
PhD in Nutrition from the Federal University of Pernambuco (UFPE). Adjunct Professor at the Federal University of Alagoas.
ORCID: https://orcid.org/0000-0003-1087-1320

Gabriel Soares Badue
PhD in Science Education, Philosophy, and History of Science from the Federal University of Bahia (UFBA). Adjunct Professor at the Federal University of Alagoas.
ORCID: https://orcid.org/0000-0002-4663-4936

INTRODUCTION

Breast milk is widely recognized as the "gold standard" for infant feeding and is essential for promoting maternal and child health[1]. Exclusive breastfeeding until the sixth month of life promotes the development of intestinal microbiota, reduces the risk of allergic disorders and obesity, and contributes to better cognitive performance in children [2-8]. For mothers, breastfeeding is associated with a lower incidence of type 2 diabetes and cardiovascular disease [9].

Despite the evidence, exclusive breastfeeding rates remain unsatisfactory in Brazil (45.8%) and even lower in Alagoas (40%), far from the 70% target proposed by the World Health Organization for 2030 [10-12]. The causes of early weaning involve biopsychosocial factors, including the use of artificial nipples, early introduction of formula, and low maternal education, which limits access to qualified information and reinforces cultural practices that hinder breastfeeding[(13)].

Advances in technological development, coupled with the growing popularity of mobile devices such as tablets and smartphones and increased access to the internet, have transformed social media into accessible, dynamic, and economically viable channels for disseminating health information, making it a strategic tool for promoting health education [14-18]. In this context, social networks have proven to be tools for promoting and supporting breastfeeding, as they enable the creation of safe, welcoming, and interactive virtual environments. These spaces favor the sharing of evidence-based information and the strengthening of the bond between health professionals and postpartum women, thus contributing to the improvement of exclusive breastfeeding indicators[16-19].

Given this scenario, the present study aimed to assess whether postpartum women who received breastfeeding guidance through social media maintained exclusive breastfeeding for a longer period compared to those who received only conventional guidance provided at the time of hospital discharge.

METHOD

DOI: 10.36489/saudecoletiva.2025v16i103p18312-18329

This study is a randomized clinical trial based on the *Consolidated Standards of Reporting Trials* (CONSORT) guidelines for non-pharmacological interventions[20]

The study was conducted with 173 postpartum women admitted to a maternity hospital located in Maceió (Alagoas). The hospital provides teaching and social assistance services and is a reference center for obstetric emergencies, specialized outpatient care, and medium- and high-complexity hospitalizations.

Women in the immediate postpartum period who were treated at the maternity hospital, resulting from pregnancies with healthy newborns admitted to shared accommodation, postpartum women aged 15 years or older who were breastfeeding and had a telephone number with access to the *WhatsApp* platform were considered eligible.

To estimate the sample size, we considered the 40% prevalence of exclusive breastfeeding (main variable) in children under six months of age in the city of Maceió, Alagoas, according to data from the Food and Nutrition Surveillance System for the year 2022. A significance level of 5%, test power of 80%, and expected clinical difference of 20% were used. To detect a significant increase in the prevalence of exclusive breastfeeding in the intervention group, 70 postpartum women in each group (intervention and control) would be needed to reach the total sample size of 140 women. Anticipating possible losses during follow-up, an approximate percentage of 20% was added to the total sample, resulting in a final estimated sample of 168 postpartum women.

Once admitted, all participants received a practical guide on breastfeeding and filled out an admission form containing socioeconomic, demographic, obstetric, and breastfeeding knowledge information.

Data collection was carried out between May 2023 and February 2024 and comprised different phases.

Phase 1 – Admission: at this stage, a form containing sociodemographic, obstetric, behavioral, and variables related to the current pregnancy was applied at the maternity ward, in addition to the type of feeding and the use of artificial nipples by the newborn. Participants signed an informed consent form, and in the case of minors under 18 years of age, a consent form.

Randomization was conducted by an independent, blinded statistician, who maintained confidentiality regarding allocation until the end of the study. The women were randomly assigned to the control group and the intervention group using a dichotomous numerical list generated in Microsoft Excel, using the "random between 0 and 1" function, with "0" corresponding to the control group and "1" to the intervention group.

Phase 2 – Intervention : As a strategy to blind the participants, a standard intervention was applied to the control group (CG) and a standard intervention with an educational component was applied to the intervention group (IG). The standard intervention consisted of routine guidance provided by the nursing staff of the joint accommodation, focused on the importance and benefits of breastfeeding.

The intervention group also received an educational intervention mediated by the WhatsApp social network, based on a participatory approach to health education. After admission to the study, participants were included in groups created on the platform, in which educational content on breastfeeding, such as short videos, brochures, and digital newsletters, was shared once a week. The materials were developed from practical guides[18,21] . The educational content of the intervention group was developed for a period of 13 weeks, based on practical guides on breastfeeding. Each week, a new topic was shared via WhatsApp, addressing theoretical and practical aspects of breastfeeding. Among the topics covered were: milk let-down and its advantages; signs of effective suckling; breastfeeding positions; exclusive breastfeeding; risks of using artificial nipples; strategies to increase milk production; breast care; management of complications such as mastitis, fissures, and candidiasis; milk expression, preservation, and storage techniques; importance of human milk banks; and composition of breast milk.

In addition to these groups, a space called "Ask, Mom" was created, which brought together all participating postpartum women and served as an interactive support channel. In this group, mothers could send questions and reports via text or audio, receiving responses from a multidisciplinary team composed of nutritionists, speech therapists, psychologists, and nurses.

After hospital discharge, participants in both groups were followed up in the first and third months postpartum (30 and 90 days) through telephone calls and WhatsApp messages. The first follow-up was conducted during the critical period of adaptation to breastfeeding, and the second preceded the usual end of maternity leave, when many women begin the weaning process (Dodou et al., 2021).

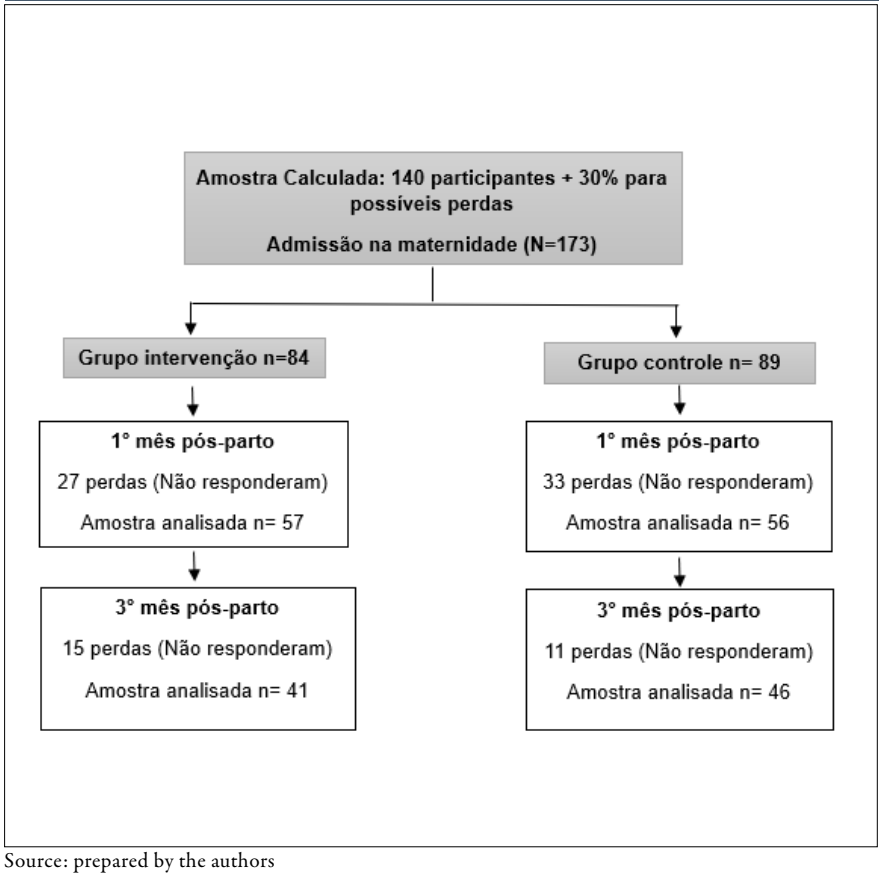
Phase 3 - Evaluation of outcomes: The dependent variables analyzed in the study, collected through telephone interviews with a semi-structured questionnaire, refer to maternal practices and perceptions related to breastfeeding. The following were evaluated: Breastfeeding (considering both exclusive and predominant or complementary); Exclusive breastfeeding (when the child receives only breast milk, directly from the breast or expressed, without any other food

DOI: 10.36489/saudecoletiva.2025v16i103p18312-18329

or liquid); use of pacifiers and bottles in the last month; the intention to continue breastfeeding and the intention to offer cow's milk or infant formula in the first year of life.

Figure 1 shows the flowchart of participants during the study. Women were excluded in both the third and sixth months postpartum because they did not respond to telephone contact after three attempts.

Figure 1. Flowchart representing the flow of participants in each phase of the study – Maceió-Alagoas, Brazil, 2023-2024.



Source: prepared by the authors

All analyses were performed using *Stata 14.0 software*. Pearson's chi-square test was used to assess differences in breastfeeding-related outcomes between the control and intervention groups. Fisher's Exact Test was used for comparisons between proportions. To measure the strength of the association between categorical variables, the relative risk (RR) was calculated with a 95% confidence interval (95% CI). A p-value less than 0.05 was considered significant.

This study was approved by the Research Ethics Committee of the Professor Alberto Antunes University Hospital, under certificate of presentation for ethical review No. 67793023.5.0000.01556494. It was also registered in the Brazilian Clinical Trials Registry database, with primary identifier: (UTN: U1111-1307-6494).

RESULTS

Between May and August 2023, 173 participants met the inclusion criteria and agreed to participate in the study, being randomly assigned to the Control (n = 89) and Intervention (n = 84) groups. Losses during study follow-up are shown in Figure 1. The main reasons for sample losses were: failure to answer phone calls for interviews in the first and sixth months, voluntary withdrawal from the WhatsApp intervention group, change of phone number, or non-existent contact number, respectively.

The analysis of sociodemographic and obstetric characteristics did not identify statistically significant differences between the control and intervention groups. Most participants had a family income equal to or greater than the minimum wage (83.9% in the control group and 77.4% in the intervention group; p-value = 0.75), and stable marital relationships were predominant (56.9% and 52.3%, respectively; p-value = 0.50). The distribution of residence area was also similar, with most living in urban areas (87.5% and 88.1%; p-value = 0.90) and in brick houses (96.6% and 97.6%; p-value = 0.62). Regarding the type of delivery, cesarean section was the predominant route in both groups (70.8% and 70.2%; p-value = 0.93). Table 1 shows that the results indicate that the characteristics of the participants were well distributed between the groups, with no significant bias between the variables analyzed.

At 30 days postpartum, 82.5% of women in the IG were breastfeeding, compared to 94.6% in the CG, with no statistically significant difference (p = 0.074), with RR = 0.87 (95% CI: 0.04–1.13) (Table 3). At 90 days, the prevalence was similar between the groups (78.3% GI vs. 78.1% CG), with no significant difference (p = 0.981; RR = 1.00; 95% CI: 0.82–1.25), indicating overall maintenance of breastfeeding in both groups over time (Table 3).

DOI: 10.36489/saudecoletiva.2025v16i103p18312-18329

Table 1. Frequency (%) of socioeconomic, demographic, and obstetric variables of postpartum women treated at a public hospital. Maceió, Alagoas, Brazil, 2023–2024 (N = 173)

Variables	N	Intervention group n (%)	Control group n (%)	p-value*
Family income				
< 1 salary	19	10 (11,9)	9 (10,1)	0,750
≥ 1 salary	115	53 (63,1)	62 (69,6)	
≥ 3 salaries	24	12 (14,3)	12 (13,5)	
Did not know	15	9 (10,7)	6 (6,7)	
Marital status				
Single	40	20 (23,8)	20 (22,5)	0,511
Married	36	19 (22,6)	17 (19,1)	
Divorced	2	0 (0,0)	2 (2,2)	
Stable marital union	94	44 (52,3)	50 (56,9)	
Widow	1	1 (1,2)		
Household residents				
2	1	1 (1,19)	0 (0,0)	0,685
3	57	26 (30,9)	31 (34,8)	
4	48	23 (27,4)	25 (28,1)	
5	67	34 (40,5)	33 (37,1)	
Beneficiary of social program				
program	99	52 (61,9)	47 (52,8)	0,260
Yes	74	32 (38,1)	42 (47,2)	
No				
Area of residence	151	74 (88,1)	77 (87,5)	0,883
Urban area	21	10 (11,9)	11 (12,5)	
Rural area				
Type of residence	168	82 (97,6)	86 (96,6)	0,513
Masonry/Brick	1	0 (0,0)	1 (1,1)	
Wood	4	2 (2,4)	2 (2,2)	
Taipa				
Type of delivery	122	59 (70,2)	63 (70,8)	0,975
Cesarean	51	25 (29,7)	26 (29,2)	
Normal				
Sex of newborn	87	37 (44,1)	50 (56,2)	0,110
Male	86	47 (55,9)	39 (43,8)	

*Pearson's chi-square test
Source: prepared by the authors

Although at 30 days there was no statistically significant difference between the groups (38.3% IG vs. 50.9% CG; p = 0.213) (Table 2), at 90 days, the IG had a significantly higher proportion of exclusive breastfeeding (66.7% vs. 40.6%), with RR = 1.64 (95% CI: 1.01–2.64; p = 0.031). This result indicates that mothers exposed to the educational intervention through digital media were more likely to maintain exclusive breastfeeding at 3 months postpartum (Table 3).

At 30 days, the intention to continue breastfeeding was significantly higher in the GI (96.5%) than in the CG (82.1%; p = 0.017), with RR = 1.17 (95% CI: 1.02–1.34) (Table 2). However, at 90 days, this difference disappeared (86.4% IG vs. 82.9% CG; p = 0.694), reflecting a possible initial effect of the intervention on maternal motivation to maintain breastfeeding (Table 3).

The proportion of women who

DOI: 10.36489/saudecoletiva.2025v16i103p18312-18329

intended to avoid introducing formula or cow's milk in the first year was higher in the CG at 30 days (34.6% vs. 19.3%), but without statistical significance (p = 0.079; RR = 1.20; 95% CI: 0.97–1.56) (Table 2). At 90 days, this trend was reversed, with a higher prevalence of intention to avoid early introduction in the LG (28.9% vs. 15.0%), also without significance (p = 0.125; RR = 0.83; 95% CI: 0.67–1.05). (Table 3)

Table 2. Relative risk (RR) and 95% confidence intervals (95% CI) of study variables related to breastfeeding after 1 month of participatory educational interventions with postpartum women treated at a public hospital. Maceió, Alagoas, Brazil, 2023–2024

Outcomes	1 month postpartum (n=113)			
	Intervention group n (%)	Control group n (%)	p-value*	RR(95% CI)
Breastfeeding				
No	10 (17,54)	3 (5,36)	0,074	0,87 (0,04–1,13)
Yes	47 (82,46)	53 (94,64)		
Exclusively breastfed				
No	29 (61,70)	26 (49,06)	0,213	0,75 (0,47–1,17)
Yes	18 (38,30)	27 (50,94)		
Controls feeding schedule				
No	35 (62,50)	40 (75,47)	0,144	1,52 (0,85–2,73)
Yes	21 (37,50)	13 (24,53)		
Intention to continue breastfeeding				
No	2 (3,51)	10 (17,86)	0,017**	1,17 (1,02–1,34)
Yes	55 (96,49)	46 (82,14)		
Intention to offer cow's milk or infant formula in the first year of life				
No	11 (19,30)	18 (34,62)	0,079	1,2 (0,97–1,56)
Yes	46 (80,70)	34 (65,38)		
Pacifier use in the last month				
No	38 (66,67)	36 (65,45)	0,892	0,95 (0,57–1,61)
Yes	19 (33,33)	19 (34,55)		
Use of baby bottles in the last month				
No	30 (52,63)	25 (44,64)	0,397	0,85 (0,59–1,22]
Yes	27 (47,37)	31 (55,36)		

*Pearson's chi-square test. ** p<0.05.
Source: prepared by the authors

The use of pacifiers and baby bottles was high in both groups and periods. At 30 days, 33.3% of women in the IG and 34.6% in the CG reported pacifier use, with no statistical difference (p = 0.892; RR = 0.95; 95% CI: 0.57–1.61) (Table 2). Bottle use was also similar between groups (47.4% IG vs. 55.4% CG; p = 0.397; RR = 0.85; 95% CI: 0.59–1.22). At 90 days, these prevalences remained high, with no significant differences in either case (Table 3).

DOI: 10.36489/saudecoletiva.2025v16i103p18312-18329

Table 3. Relative risk (RR) and 95% confidence intervals (95% CI) of study variables related to breastfeeding after 3 months of participatory educational interventions with postpartum women treated at a public hospital. Maceió, Alagoas, Brazil, 2023–2024

Outcomes	1 month postpartum (n=113)			
	Intervention group n (%)	Control group n (%)	p-value*	RR(95% CI)
Breastfeeding				
No	10 (21,74)	9 (21,95)	0,981	1,00 (0,82 - 1,25)
Yes	36 (78,26)	32 (78,05)		
Exclusively breastfed				
No	12 (33,33)	19 (59,38)	0,031**	1,64 *(1,01 – 2,64)*
Yes	24 (66,67)	13 (40,63)		
Controls feeding schedule				
No	36 (81,82)	29 (76,32)	0,613	0,80 (0,33 - 1,87)
Yes	8 (18,18)	9 (23,68)		
Intention to continue breastfeeding				
No	6 (13,95)	7 (17,07)	0,694	1,03 (0,86 – 1,24)
Yes	37 (86,43)	34(82,93)		
Intention to offer cow's milk or infant formula in the first year of life				
No	13 (28,89)	6 (15,00)	0,125	0,83 (0,67 - 1,05)
Yes	32 (71,11)	34 (85,00)		
Pacifier use in the last month				
No	28 (60,87)	23 (56,10)	0,652	0,89 (0,54 - 1,46)
Yes	18 (39,13)	18 (43,90)		
Use of baby bottles in the last month				
No	15 (32,61)	11 (26,83)	0,557	0,92 (0,70 – 1,21)
Yes	31 (67,39)	30 (73,17)		

*Pearson's chi-square test ** p<0.05.
Source: prepared by the authors

DISCUSSION

The intervention group showed a greater intention to continue breastfeeding at 30 days postpartum and a higher prevalence of exclusive breastfeeding at three months, in line with evidence highlighting the role of participatory educational interventions in promoting maternal self-confidence and self-efficacy[14-16] .

The prevalence of exclusive breastfeeding in the first month corresponded to approximately 45% of the sample, a value similar to the national average[(10)]. Although Brazil has made progress with public policies, rates remain below the 70% target recommended by the World Health Organization and the Ministry of Health[((11(1)))]. In the intervention group, the prevalence reached 66.7% at three months postpartum, approaching the proposed target[((1212))].

The greater intention to continue breastfeeding among participants in the intervention group suggests a positive effect of educational mediation through digital media, corroborating the findings of Dodou et al.[15] , who demonstrated the strengthening of maternal self-efficacy in remote interventions. A lower intention to introduce cow's milk or formula early was also observed, although not statistically significant, indicating a possible initial impact of the intervention. Similar results were observed by Aldana-Parra et al.[19] , who reported a significant reduction in formula use at four months in women exposed to structured remote counseling.

Early introduction of breast milk substitutes increases the risk of gastrointestinal disorders and allergies, while breastfeeding has a protective effect against overweight, respiratory infections, and intestinal microbiota imbalances [5,6] . Cultural beliefs that associate breast milk with insufficiency still persist, contributing to early weaning [22] . Educational strategies promote critical thinking and maternal empowerment, increasing knowledge about the benefits of breastfeeding and the risks of early use of formulas and artificial nipples [8,15] .

The use of bottles and pacifiers was high in both groups, with no significant difference, although their potential to interfere with breastfeeding

DOI: 10.36489/saudecoletiva.2025v16i103p18312-18329

duration and orofacial development is recognized [23] . Social media-mediated health interventions have proven effective in promoting breastfeeding and training health professionals[18,24].

Recent studies confirm the good acceptance of digital technologies by Brazilian postpartum women, who value welcoming and active listening in online interactions, suggesting hybrid models of face-to-face and remote monitoring [22,]

The findings reinforce the relevance of educational interventions in prolonging breastfeeding, especially in the postpartum period. Despite the lack of statistical significance in some variables, a positive trend was observed in the intervention group. Among the limitations, the loss of follow-up due to the difficulty of telephone contact stands out. Future research, with prolonged follow-up and more robust engagement strategies, may deepen the understanding of the potential of digital media in supporting breastfeeding.

FINAL CONSIDERATIONS

This study reinforces the potential of social media as strategic health education tools for encouraging breastfeeding. The intervention promoted a greater intention to breastfeed in the first month postpartum and a higher prevalence of exclusive breastfeeding at three months postpartum in the intervention group. These findings suggest that virtual educational actions, with participatory strategies, can contribute to the promotion of breastfeeding, in line with the goals of the World Health Organization. Investments in public policies that integrate digital technologies into maternal and child care, coupled with the strengthening of continuous and interactive support between breastfeeding women and health professionals, may be fundamental to reducing early weaning and extending the duration of breastfeeding.

REFERENCES

1. Brasil. Ministério da Saúde. Sistema de Vigilância Alimentar e Nutricional – SISVAN: relatório do consumo alimentar dos indivíduos acompanhados por período, fase do ciclo da vida e índice. Brasília (DF): Ministério da Saúde; 2022.

2. Marrs T et al. Gut microbiota development during infancy: impact of introducing allergenic foods. J Allergy Clin Immunol. 2021;147(2):613-21. e9. DOI: https://doi.org/10.1016/j.jaci.2020.09.042

3. Rajagopalan V, et al. Breastfeeding duration and brain-body development in 9-10-year-olds: modulating effect of socioeconomic levels. Pediatr Res. 2025;97(1):378-86. DOI: https://doi.org/10.1038/s41390-024-03330-0

4. McGowan C, Bland R. The benefits of breastfeeding on child intelligence, behavior, and executive function: a review of recent evidence. Breastfeed Med. 2023;18(3):172-87. DOI: https://doi.org/10.1089/bfm.2022.0192

5. Nuzzi G, Di Cicco ME, Peroni DG. Breastfeeding and allergic diseases: what's new? Children (Basel). 2021;8(5):330. DOI: https://doi.org/10.3390/children8050330. Accessed 2025 Jul 25.

6. Zuurveld M, et al. Specific human milk oligosaccharides differentially promote Th1 and regulatory responses in a CpG-activated epithelial/immune cell coculture. Biomolecules. 2023;13(2):263. DOI: 10.3390/biom13020263. Available from: https://pubmed.ncbi.nlm.nih.gov/36830632/. Accessed 2024 Jan 20.

7. Souza BS, et al. Fatores associados ao desmame precoce no contexto brasileiro. Saberes Plurais Educ Saúde [Internet]. 2023 Oct 6 [cited 2025 May 2];7(2):e133427. Available from: https://seer.ufrgs.br/index.php/saberesplurais/article/view/133427

8. Regalo IH, et al. Breastfeeding, introduction of food and use of pacifier on the stomatognathic system of children with mixed dentition. J Health Sci [Internet]. 2020 Dec 21 [cited 2025 May 2];22(4):222-8. Available from: https://journalhealthscience.pgsscogna.com.br/JHealthSci/article/view/7821

9. Alotiby A. The role of breastfeeding as a protective factor against type 1 and type 2 diabetes and rheumatoid arthritis in mothers: a systematic review. Front Pediatr. 2023;11. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9981158/ . Accessed 2025 Aug 4.

10. ENANI. Estudo Nacional de Alimentação e Nutrição Infantil – ENANI-2019: Resultados preliminares – Indicadores de aleitamento materno no

DOI: 10.36489/saudecoletiva.2025v16i103p18312-18329

Brasil [Internet]. Rio de Janeiro: UFRJ; 2020 [cited 2025 Mar 19]. Available from: https://enani.nutricao.ufrj.br/

11. Brasil. Ministério da Saúde. II Pesquisa de Prevalência de Aleitamento Materno nas Capitais Brasileiras e Distrito Federal [Internet]. Brasília (DF): Ministério da Saúde; 2009 [cited 2025 Mar 19]. Available from: https://bvsms.saude.gov.br/bvs/publicacoes/pesquisa_prevalencia_aleitamento_materno.pdf

12. Organização Mundial da Saúde (OMS). Infant and young child feeding: Indicators for assessing infant and young child feeding practices. Geneva: WHO; 2021. Available from: https://www.who.int/publications/i/item/9789240018389

13. Unfried AGC, et al. Neonatal factors associated with early weaning in a municipality in Bahia, Brazil: a cross-sectional study. Rev Esc Enferm USP. 2024;58:e20240091. DOI: https://doi.org/10.1590/1980-220X-REEUSP-2024-0091en . Accessed 2025 Jul 26.

14. Wu Q, et al. Effectiveness of WeChat for improving exclusive breastfeeding in Huzhu County, China: randomized controlled trial. J Med Internet Res. 2020;22(12):e23273. DOI: https://doi.org/10.2196/23273

15. Dodou HD, et al. Telephone intervention to promote maternal breastfeeding self-efficacy: randomized clinical trial. Rev Esc Enferm USP. 2021;55:e20200520. Available from: https://doi.org/10.1590/1980-220X-REEUSP-2020-0520 . Accessed 2025 Jun 5.

16. Cirino AG, et al. Mídias sociais como ferramenta de apoio e incentivo ao aleitamento materno no pós-parto: uma revisão sistemática. gepnews [Internet]. 31º de agosto de 2023 [citado 6º de novembro de 2025];7(2):220-7. Disponível em: https://seer.ufal.br/index.php/gepnews/article/view/16112

17. David HMSL, et al. Análise de redes sociais na atenção primária em saúde: revisão integrativa. Acta Paul Enferm. 2018;31(1):108-15. DOI: https://doi.org/10.1590/1982-0194201800016

18. Cavalcanti DS, et al. Online participatory intervention to promote and support exclusive breastfeeding: randomized clinical trial. Matern Child Nutr. 2019;15(3):e12806. DOI: https://doi.org/10.1111/mcn.12806

19. Aldana-Parra F, Romero-Álvarez N, Alzate-Yepes M, et al. Effectiveness of a new breastfeeding counselling intervention on breastfeeding prevalence, infant growth velocity and postpartum weight loss in overweight women: a randomized controlled trial. Int Breastfeed J. 2025;20:14. Available from: https://internationalbreastfeedingjournal.biomedcentral.com/articles/10.1186/s13006-025-00703-x. Accessed 2025 Aug 12.

20. Boutron I, et al. CONSORT Statement for Randomized Trials of Nonpharmacologic Treatments: A 2017 Update and a CONSORT Extension for Nonpharmacologic Trial Abstracts. Ann Intern Med. 2017;167(1):40-7. Available from: https://doi.org/10.7326/M17-0046 . Accessed 2020 Jul 10.

21. Bezerra MKA, et al. Apoio à amamentação: um guia acolhedor para mães, familiares e profissionais de saúde [Internet]. 1st ed. Maceió (AL): Agência de Produção Editorial de Alagoas (Apeal); 2024 [cited 2025 Mar 19]. Available from: https://apealeditora.com.br/ebooks/202519144632726.pdf

22. de Souza J et al. Investigating interactive methods in remote lactation support in Brazil: a qualitative study. Front Digit Health. 2023;5. Available from: https://www.frontiersin.org/articles/10.3389/fdgth.2023.1143528/full. Accessed 2025 Aug 2.

23. Zander LRM et al. Aleitamento materno e hábitos de sucção nutritiva e não-nutritiva: acompanhamento de bebês aos seis meses em um projeto de extensão. Braz J Health Rev [Internet]. 2022 Mar 18 [cited 2025 May 2];5(2):4568-77. Available from: https://ojs.brazilianjournals.com.br/ojs/index.php/BJHR/article/view/45303

24. Peres JF, et al. Percepções dos profissionais de saúde acerca dos fatores biopsicossocioculturais relacionados com o aleitamento materno. Saúde Debate [Internet]. 2022 Jun 27 [cited 2025 May 2];45(128):141-5. Available from: https://revista.saudeemdebate.org.br/sed/article/view/3500

DOI: 10.36489/saudecoletiva.2025v16i103p18312-18329