



Benefits of adherence to exclusive breastfeeding: An integrative review

Benefícios da adesão ao aleitamento materno exclusivo: Uma revisão integrativa

DOI: 10.56238/isevjhv2n5-0XX

Receipt of originals: 08/08/2023

Acceptance for publication: 13/09/2023

Larissa Almeida da Silva

Institution: University of Franca, France (UNIFRAN)

Rafael Fernandes Eleutério

Institution: University of Franca, France (UNIFRAN)

E-mail: rafaelfernandesmedicina@gmail.com

Eleonora Lemos Salmazo

Institution: University of Franca, France (UNIFRAN)

Julia Gabrielle Silvia Pereira

Institution: University of Franca, France (UNIFRAN)

Melina Martins de Oliveira Krauss

Institution: University of Franca, France (UNIFRAN)

Paula Cristina Silva Gomes

Institution: Municipal University Center of Franca, Franca (Uni-FACEF)

Francini, Viscondi, Lopes e Moura;

Institution: University of Taubaté (UNITAU)

ABSTRACT

Objective: To identify the scientifically proven benefits of EBF practice and adherence to the binomial. **Methods:** Integrative literature review in the databases, Scientific Electronic Library Online (SciELO), Latin American and Caribbean Literature in Health Sciences (LILACS), Virtual Health Library (VHL), including articles published between 2017 and 2021. The descriptors "Breastfeeding", "weaning", "disease prevention" and "health promotion" were used. **Results:** The final sample was composed of 18 articles, most of which addressed the aspects that permeate and collaborate for an adequate practice of breastfeeding and the benefit of its short to long-term use of the binomial. **Final considerations:** The practice of breastfeeding in exclusivity is influenced by several factors, which include social, economic, cultural, ethnic, and psychological aspects. This practice is responsible for generating numerous benefits for the mother and the baby, such as promoting a healthy gastrointestinal (GI) microbiome of the newborn, better cognitive performance, immunity and contribute to the maturation and proper development of the orofacial muscles. For the nursing mother prevents hemorrhages and neoplasms.

Keywords: Pediatrics, Breastfeeding, Lactation, Health promotion, Disease prevention.



1 INTRODUCTION

Based on the aspects that permeate breastfeeding (BF), it is important to understand that there are several breastfeeding patterns, especially exclusive breastfeeding (EBF), in which the child receives only breast milk, breast milk or milked with adequate storage technique, without the presence of other liquids or solid foods. There is also the predominant breastfeeding, in which the child begins to receive water or liquids, added to the milk. In addition, those who receive complementary foods, solid or semi-solid, added to breast milk are adept at supplemented breastfeeding. (DAR, CAMPOS, SILVA, BORGES, & BLANK, 2017)

BF is an effective and natural strategy of growth, development, affection, protection and nutrition for the child and is a practical way contributing to the reduction of infant morbidity and mortality. Breast milk can exclusively provide the nutritional demands of the child in the first six months. (RODRIGUES, 2018; OAK, 2019)

Because of this, the World Health Organization (WHO) recommends the exclusivity of feeding with breast milk until six months of age, then supplemented adequately at least until two years, generating a positive impact on both survival and health of the infant for life. (LOPES, 2018; OAK, 2019)

Children in EBF have a lower risk of developing chronic non-communicable diseases in adulthood in the long term. In the short term, it is observed that exclusive breast milk reduces infant mortality, the incidence and severity of diarrhea, morbidity due to respiratory infection and allergies, favors better nutrition, development of the oral cavity, cognitive development in childhood, adolescence, and adulthood. Its effects in lactating women are protective against breast cancer, ovarian cancer, type 2 diabetes mellitus and there is still contraceptive effect (DAR, 2017; Lopes, 2018). From the age of two, breast milk continues to provide a good source of nutrients since 500 ml contributes 95% of vitamin C needs, 45% of vitamin A needs, 38% of protein needs and 31% of total energy at this age. (RODRIGUES, 2018)

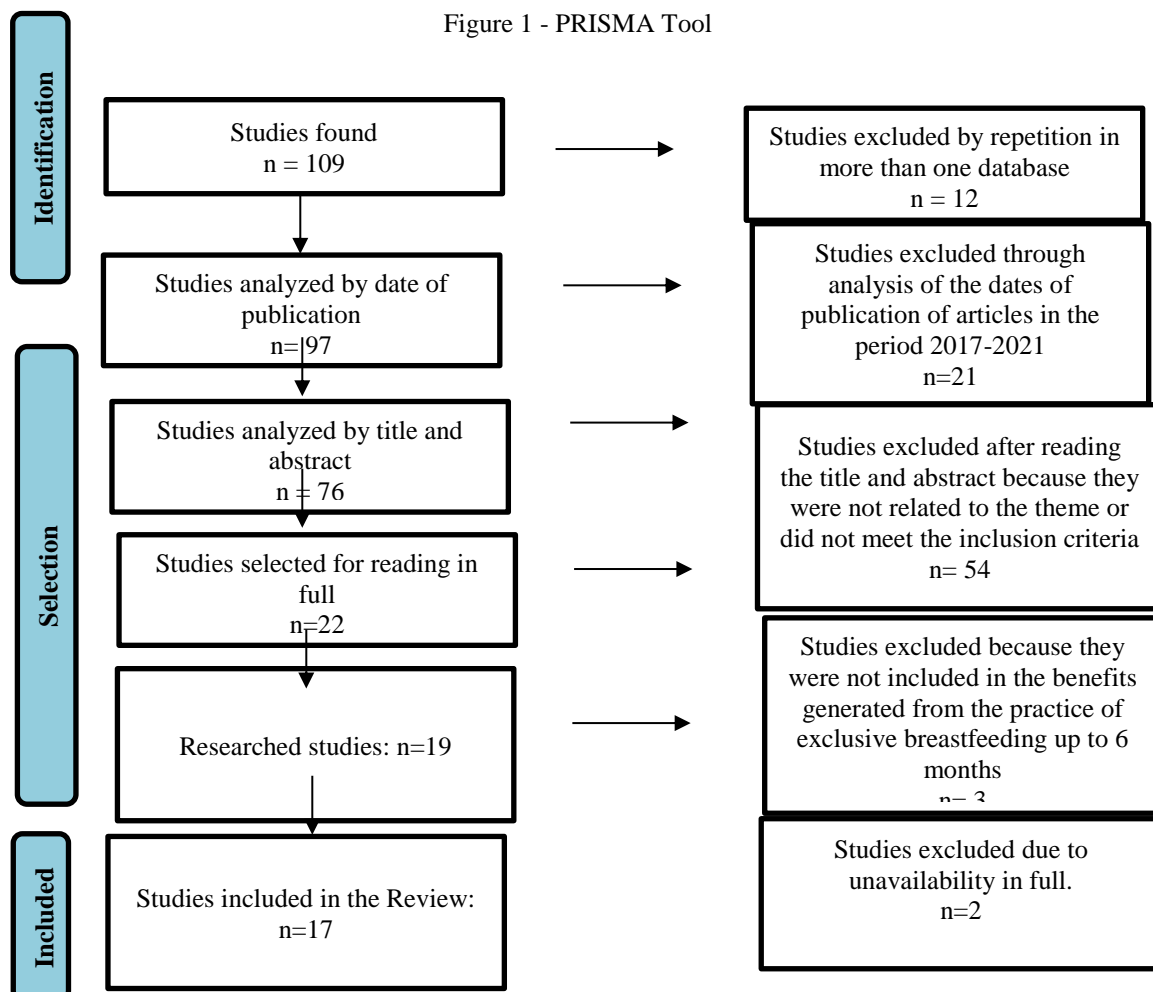
The practice of breastfeeding is influenced by several factors, which include social, economic, cultural, ethnic, and psychological order. Among these factors, the ones that are most associated with a shorter duration of practice are: lack of adequate information, rejection of the infant, absence of milk by the mother or beliefs that milk is not enough. These practices, when inappropriate, can increase the chance of contamination and allergic reactions, in addition to interfering with the absorption of important nutrients from breast milk, implying a risk of early weaning. (ANTUNES, 2018; LOPES, 2018)

Added to all these aspects, it is emphasized that breastfeeding is an excellent strategy for health promotion and disease prevention. In addition, it promotes an affective bond between mother and child, being a unique opportunity to ensure intimacy and affection between both, generating as consequences feelings of safety, comfort and protection in the child, self-confidence and personal fulfillment in the mother. (DAR, CAMPOS, SILVA, BORGES, & BLANK, 2017)

2 METHODS

This study is an Integrative Review (IR), which uses the synthesis of results to allow the identification of current knowledge and existing gaps on a given topic, through the collection of data and bibliographies. The IR phases boil down to developing a guiding question, providing the search or sampling in the literature, collecting the data, critically analyzing the included studies, discussing the results and presenting the conclusion of the research. (Mendes, 2008)

For the construction of IR, the PRISMA flowchart was used, representing the process of search and selection of articles and documents in the databases, as can be seen in Figure 1.



Source: Adapted from (Moher, Liberati, Tetzlaff, & Altman, 2015)

The research included a search through the databases Scientific Electronic Library Online (SciELO), Latin American and Caribbean Literature in Health Sciences (LILACS), Virtual Health Library (VHL) including articles published between 2017 and 2021, which were in the languages Portuguese, English and Spanish available in full, in order to update the theme.

The following descriptors were used to select the articles: "Breastfeeding", "Weaning", "Disease prevention" and "Health promotion". The descriptors were aligned according to the database used in order to cover the largest number of eligible studies. In addition, the Rayyan platform was used, a free application developed by the Qatar Computing Research Institute (QCRI) in order to judge which articles would be part of the review, without bias between the authors and conflicts of interest. In it, it contained a collection composed of 109 studies, being used for screening from the reading of the titles and abstracts in conjunction with the guiding question: "What are the benefits of EBF for disease prevention, scientifically proven, found in the last five years, for the binomial.

Articles that did not answer the guiding question mentioned above were excluded together with duplicate articles and those published in years prior to 2017. After the judgment by all authors, 17 papers were considered eligible, these, read in full and with a careful and qualitative evaluation ended up being included in this review. Finally, in order to synthesize the data collection, the findings were described through a table, with the following information: Title, Country/Place of publication, type of study, intervention and results.

The studies were published from 2017 to 2021. The articles had as authors students and academics of the medical course, doctors, masters and doctors, as well as Health Institutions.

3 RESULTS

From the combination of the keywords described, seventeen studies were identified, which could be summarized in chart 2.

Tables 2: Summary of the studies included in IR.

No.	Authors (Year)	Main findings
1	SAYRES & VISENTIN (2018)	Despite the recommendations on breastfeeding, we are falling short of these goals. We know of several barriers to breastfeeding, some of which we can control and some of which we cannot. A family-centered approach has been shown to increase breastfeeding rates. The pediatrician significantly influences patients and families. By utilizing these methods and keeping in mind the barriers each patient may encounter, it is hoped that the Healthy People 2020 breastfeeding goals will be achieved.
2	FICARA, et al. (2018)	As a way to avoid conditions that impair the normal development of the intestinal microbiota, breastfeeding should be promoted, hospitalization time reduced and unnecessary antibiotics minimized.

3	BROCKVELD & VENANCIO (2020)	The evidence presented in the books shows that breastfeeding is a decisive and fundamental factor for the correct maturation and growth of the structures, keeping them able to exercise the development of the orofacial muscles, which will stimulate the progression of physiological functions, promoting not only survival, but also better quality of life.
	PARK, LEE, SUN, KIM & (2018)	The intention to breastfeed after childbirth was associated with notably stronger benefit, higher levels of self-efficacy, and lower alcohol consumption. The study noticed the high intention to breastfeed related to GDM. Breastfeeding education in mothers with GDM should focus on the benefit of breastfeeding and strengthening self-esteem.
4	PETERSEN (2017)	The Centers for Disease Control and Prevention is committed to introducing new practical solutions. The CDC is committed to the importance of emphasizing that individual mothers are at the center of every successful breastfeeding experience. All efforts go into maximizing each mother's success in safely providing the healthiest nutrition for her baby.
5	BOSSO et al (2018)	Over the past ten years, the United States has made significant strides in helping more women breastfeed. Only through the continued collaboration of states, communities, hospitals, national organizations, and federal agencies such as the CDC can everyone ensure that mothers who choose to breastfeed have the means and support they need to do so.
6	WONG, et al. (2019)	It showed from the data presented that the mean total duration of breastfeeding was 10.5 months (interquartile range 6.0, 14.0) and 14.7% of the households had household food insecurity.
7	LUCAS (2019)	The importance of breastfeeding or breast milk itself was emphasized, but they put an addendum on the difference between the premature baby and a full-term baby, in view of the different benefits that human milk can offer.
8	BARNES (2020)	Baby Cafés model offers community support to breastfeeding helping to achieve breastfeeding goals of 12 months duration.
9	SUTTER (2018)	It is essential that there is a more efficient support of education and information to increase the knowledge base of mothers about breastfeeding so that breastfeeding is initiated and maintained. Especially for breastfeeding women at higher risk of interrupting breastfeeding, this need is even greater. New methods for delivering information should be considered, as well as demographically relevant materials that avoid value judgments or assumptions.

Continuous...

10	BÜHRER (2019)	The rates of invasive infections, ECN and mortality in preterm infants can be influenced based on the choice of foods, food components and food additives. It has been shown that selenium, inulin, GOS/FOS probiotics and enteral L-glutamine are associated with decreased rates of invasive infections while zinc, L-arginine, donor milk and probiotics from multiple strains are associated with lower rates of ECN and also inulin, zinc and probiotics from multiple strains are associated with reduced all-cause mortality.
11	SCHRECK (2017)	The education carried out in the prenatal period focused on breastfeeding instructions increases the initiation of breastfeeding, however to ensure the maintenance of this practice it is necessary to maintain the continuity of postnatal education, it is evidenced that the results of such practices act by improving breastfeeding rates in low-income African populations.
12	PATTERSON (2018)	From this study, the lack of effective assistance in providing breastfeeding support was shown, since no single maternity care practice was able to explain the variability in EBF rates, as well as a set of maternity care practices.
13	JOHNSON (2020)	The implementation of breastfeeding support and resources will contribute to the removal of obstacles, as well as decrease complications and increase the duration of breastfeeding. Thus, these interventions promote the GI microbiome of the newborn. The guarantee of homeostasis and protection of the GI microbiome of the newborn is considered one of the least described benefits of breastfeeding that contributes to the promotion of long-term health of the newborn.
14	MUÑOZ (2021)	Human milk, especially from the mother, not only symbolizes the best nutrition for babies, in addition to being one of the most important therapies applied in

		neonatal intensive care, avoiding several diseases, such as necrotizing enterocolitis, late-onset sepsis, in which it was shown in a study that breast milk has bioactive elements with bactericidal action, inhibiting the growth of <i>Escherichia coli</i> , <i>Staphylococcus aureus</i> and <i>Candida sp.</i> , also prevents severe retinopathy, intraventricular hemorrhage for example, when used early. Greater knowledge of its biological properties will facilitate innovative processes for medical use.
15	JOEL BASS L (2020)	It was concluded that states with high rates of hospital breastfeeding became associated with very significant rates of any type of breastfeeding (6 and 12 months) and rates of exclusive breastfeeding (3 and 6 months) after discharge. No positive association of post-discharge breastfeeding was shown.
16	MOUKARZE (2020)	The results of this research showed limited knowledge about the fundamentals of breastfeeding that encompasses the part of breast anatomy, lactation physiology, clinical management of lactation and WHO recommendations, in addition to low levels of self-efficacy, that is, the ability to explain the benefits and potential challenges of breastfeeding in a way that the patient can understand. In addition, at the institutional level, the trainees were not learning about breastfeeding through training hospitals, but were dependent on personal relationships to learn, that is, from family and friends who may not have medical or health-related training.

Among all the articles included in this review, five address the importance of education aimed at educating the aspects that permeate breastfeeding, in addition, three other studies demonstrate the need to support breastfeeding, three studies mention the benefits of breast milk to the infant and three other articles evidence the advantages to the development and protection of the microbiome of the newborn.

The studies "Promoting and Protecting the Gastrointestinal Newborn Microbiome Through Breastfeeding Practices", "Changes of intestinal microbiota in early life" included in this review, measured the recommended duration for lactation. The study: "Breastfeeding: discovering barriers and offering solutions" exemplifies the various situations that can contribute to poor adherence to breastfeeding.

4 DISCUSSION

It is observed that unanimity in scientific evidence on the importance of exclusively breastfeeding sustenance was maintained in the first six months of life, with subsequent continuous breastfeeding, along with adequate complementary foods, up to two years of age or more. (JOHNSON et al., 2020; FICARA, 2018)

Exclusive breastfeeding is able to decrease the incidence of atopic diseases, hypertension and hyperlipidemia in childhood, in addition to reducing morbidity in infants and children throughout life. Breastfeeding helps improve maternal health by decreasing the incidence of lifelong cardiovascular disease, ovarian cancer and breast cancer. In addition, the absence of breastfeeding is related to higher rates of otitis media, higher rates of lower respiratory tract



diseases, gastrointestinal diseases and Sudden Infant Death Syndrome. As a way to promote this practice that benefits the maternal fetal binomial, hospitals such as Hospital Amigo da Criança (BFHI) have adopted strategies with specific requirements for prenatal and postnatal support to promote breastfeeding and ideal hospital care for mothers and their babies. (PATTERSON, 2019)

Among the various benefits resulting from the practice of breastfeeding for the child, it is emphasized through evidence documented in books, that breastfeeding is a fundamental factor in the process of maturation and proper development of the orofacial muscles, ensuring an adequate development of the stomatognathic system responsible for stimulating the proper functioning of chewing, ensuring better quality of life. The lack of breastfeeding with the early introduction of bottles contributes to generate changes in the structure and function of this musculature, favoring the picture of malocclusion. (BROCKVELD AND VENANCIO, 2020)

In addition, according to Buhner (2019), breastfeeding of mothers with Gestational Diabetes Mellitus (GDM) can reduce the risk of metabolic syndrome in both mothers and babies, a fact that prevents the development of type II DM in nursing mothers with previous GDM and decreases the risk of neonatal hypoglycemia and childhood obesity of babies born during GDM. In addition, babies who are breastfed have lower rates of other diseases such as asthma, urinary tract infection, obesity, necrotizing enterocolitis, T2DM, and mothers have decreased risks of some types of breast and ovarian cancer, as well as reduced risk of heart disease and type 2 diabetes. (PATTERSON, 2019)

The number of premature babies continues to increase worldwide, especially in low- and middle-income countries. Necrotizing enterocolitis is the most serious and frequent intestinal complication in preterm infants, especially those with very low birth weight. The results presented in the study "Clinical Results of the Implementation of a Breast Milk Bank in Preterm Infants (Under 37 Weeks) at the Hospital Universitário del Valle 2018–2020", shows how the early initiation of enteral feeding with breast milk before the 7th day of life reduces the chance of developing necrotizing enterocolitis by up to 93%. In addition, it was evidenced that those who receive human milk before the 7th day of life, have 37% less chance of developing late sepsis, because human milk contains bioactive substances with bactericidal activity, inhibiting the growth of *Escherichia coli*, *Staphylococcus aureus* and *Candida sp.* All of these results support the claim that human milk is not only a nutrient, but also an important therapy for premature and sick babies. (MUÑOZ, 2021)

Breast milk plays a key role in establishing a healthy newborn GI microbiome, protects the baby's health, promotes homeostasis, and supports immune functions. Breast milk has a unique



composition that cannot be duplicated in manufactured formulas, mainly because it is dynamic, that is, the composition changes to meet the needs of the newborn over time, offering macronutrients, micronutrients and bacteria to assist in the development of the gastrointestinal microbiome of the same. (SCHRECK, 2017; Johnson, 2020)

The growth process of the newborn allows the establishment and maintenance through breastfeeding. Breast milk contains probiotics and probiotics (immunoglobulins) that promote the integrity of the gastro intestinal mucosa and, added to the presence of breast milk oligosaccharides (HMOs) found naturally in breast milk, promotes the growth of Bifidobacteria. As an example of the role of these commensal bacteria, we have the modulation of the intestinal mucosal barrier, which is the first line of defense against pathogens, consequently, breastfeeding reduces infections. Still in the same example, Bifidobacteria promotes immune and inflammatory responses to decrease vulnerability to infectious agents and optimizes the health of the newborn (JOHNSON et al., 2020).

Changes in the composition of the microbiota are associated with a number of diseases of the neonatal period, such as necrotizing enterocolitis. Already in childhood or adulthood, it results in asthma, atopic dermatitis, diabetes mellitus, inflammatory bowel diseases. In addition, non-physiological conditions during the perinatal period, such as cesarean section, prolonged hospitalization, formula feeding, and low gestational age, can also affect the normal development of the microbiota by reducing the amount of lactobacilli and Bifidobacteria. (FICARA, 2018)

As we move forward, the Center for Disease Prevention (CDC) will continue to seek opportunities for encouragement and support to achieve individual breastfeeding goals. A recent effort includes the launch of a new CDC website on infant and toddler nutrition, offering parents and caregivers reliable nutritional information to help babies get a healthy start in life, working to address gaps in hospital and medical training and education. Only through the continued collaboration of states, communities, hospitals, national organizations, and federal agencies such as the CDC will we be able to ensure that mothers who choose to breastfeed have the resources and support they need to do so. (BOSSO, 2018; PATTERSON, 2018)

Despite the explicit benefit of EBF up to 6 months and numerous studies proving the benefits of this practice, although the rates of its activity are growing, they remain below the targets, when compared to what was expected, for example, for the year 2020. The reasons why this practice has not yet reached the peak of its realization is due to several factors, from physical complications ranging from insufficient milk supply to structural barriers, such as the return to work. For this reality to be changed, it is necessary to work on the dissemination of information



about the benefits of this type of breastfeeding. According to the article "Contributions and Investments from the Centers for Disease Control and Prevention in Breastfeeding," the CDC's goal is to ensure that new mothers understand the benefits of breastfeeding. It is currently believed that the practices and care with motherhood in the first hours and days can certainly influence the entire course of breastfeeding, the duration and how the activity will occur. (PETERSEN, 2017; SUTTER, 2018; WONG, 2019)

5 FINAL CONSIDERATIONS

The research demonstrated, through an integrative literature review, that exclusive breastfeeding has several benefits for the health of the child, being a key factor in the reduction of atopic diseases, hypertension and hyperlipidemia in childhood, in addition to being fundamental in the proper development of the orofacial muscles and is also responsible for improving maternal health through the decrease in the incidence of soft cancer and breast cancer. Thus, it is concluded that breastfeeding is more than a lifestyle choice, it is an investment in the health of the mother-child binomial. Given the importance of breastfeeding in the health of mothers and children, it is critical that we take steps to support breastfeeding. Only through the support of family, communities, doctors, health systems and employers will we be able to make breastfeeding the easiest choice.



REFERENCES

- ANTUNES, L. S. et al. Amamentação natural como fonte de prevenção em saúde. *Ciência & Saúde Coletiva*, 2008 1, pp. 103-109.
- BOSSO, et al. Ten Years of Breastfeeding Progress: The Role and Contributions of the Centers for Disease Control and Prevention and Our Partners. *Breastfeeding Medicine*, 2018; 13.
- BROCKVELD L. S. et al. Como os livros-texto de Odontopediatria e Ortodontia abordam os temas aleitamento materno e alimentação complementar? *Revista da ABENO*, 2020; 1, pp. 44-51.
- BÜHRER, C, et al., Intervenções nutricionais para reduzir as taxas de infecção, enterocolite. *Fundação Internacional de Pesquisa Pediátrica*, 2019.
- CARVALHO, A. C et al. Aleitamento materno: fatores associados ao desmame precoce. *Congresso Nacional de Alimentos e Nutrição*, 2019.
- DAR, B. et al. *Tratado de Pediatria: Sociedade Brasileira de Pediatria*. Barueri, SP: 4ª edição, 2017.
- FICARA, M et al. Changes of intestinal microbiota in early life. *The Journal of Maternal-Fetal & Neonatal Medicine*, 2017.
- JENKINS, L. A et al. Examining the Baby Café Model and Mothers' Breastfeeding Duration, Meeting of Goals, and Exclusivity. *Breastfeed Med*, 2020; 331-334.
- JOEL BASS L, T. G. et al. Resultados dos Centros de Controle e Prevenção de Doenças 2018, Boletim de Aleitamento Materno: Implicações de Políticas Públicas. *Jornal Pediatric*, 2020; 16-21.
- JOHNSON, J. M et al. Titulo Promoting and Protecting the Gastrointestinal Newborn Microbiome Through Breastfeeding Practices. *The Journal of Perinatal & Neonatal Nursing*, 2020; 222-230
- MENEZES et al. Fatores associados ao desmame precoce do aleitamento materno: uma revisão. *Research, Society and Development*, 2022; 7: 11.
- LOPES, W. C. et al. Alimentação de crianças nos primeiros dois anos de vida. *Rev Paul Pediatr*, 2018; 2: 164-170.
- LUCAS, A. Scientific evidence for breastfeeding. *Nestlé Nutrition Institute Workshop*, 2019; 90: 1-12.
- MOHER, D et al. Principais itens para relatar Revisões sistemáticas e Meta-análises: A recomendação prisma. *Epidemiologia e serviços de Saúde*, 2015; 24(2), 335-342.
- MOUKARZE, S et al. A qualitative examination of barriers against effective medical education and practices related to breastfeeding promotion and support in Lebanon. *Med Educ Online*; 2020.
- PARK, S et. al . Knowledge and health beliefs about gestational diabetes and healthy pregnancy's breastfeeding intention. *Midwifery*.



PATTERSON J. A. et al. The effect of maternity practices on exclusive breastfeeding rates in U.S. hospitals. *Matern Child Nutr.* doi: 2019, 10.1111/mcn.12670.

PETERSEN R. Update: Centers for Disease Control and Prevention's Contributions and Investments in Breastfeeding. *Breastfeeding Medicine*, 2017, 12.

Resultados dos Centros de Controle e Prevenção de Doenças - 2018; boletim de aleitamento materno: Implicações de Políticas Públicas. (2019). *The journal of pediatrics*.

RODRIGUES, W. F. et al CADERNOS DE ATENÇÃO BÁSICA: SAÚDE DA CRIANÇA, ALEITAMENTO MATERNO E ALIMENTAÇÃO COMPLEMENTAR. *Revista de Enfermagem UFPE Online*, 1, 2018 pp. 280-282.

SAYRES S., & VISENTIN L.. Breastfeeding: uncovering barriers and offering solutions. *Current Opinion in Pediatrics*, 2018 pp. 591-596.

SCHRECK P. K. et al . Both Prenatal and Postnatal Interventions Are Needed to Improve Breastfeeding Outcomes in a Low-Income Population. *Breastfeeding Medicine*. 2017

SUTTER C. et al, Sources of Information and Support for Breastfeeding: Alignment with Centers for Disease Control and Prevention Strategies. *Breastfeeding Medicine*. 2018

TORRES- MUÑOZ et al . Clinical Results of the Implementation of a Breast Milk Bank in Premature Infants (under 37 Weeks) at the Hospital Universitario del Valle. *Nutrients*. 2021

VANDENPLAS , Y et al . Prevention of Allergic Sensitization and Treatment of Cow's Milk Protein Allergy in Early Life: The Middle-East Step-Down Consensus, 2019

WONG ,P. D.. Total Breastfeeding Duration and Household Food Insecurity in Healthy Urban Children. *Academic Pediatrics*, 19 ,2019 pp. 853-988.