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BREASTFEEDING, EARLY WEANING, AND THE USE OF INFANT FORMULA: AN INTEGRATIVE REVIEW

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Abstract: Exclusive breastfeeding up to the age of six months plays a fundamental role in promoting children's health and the healthy growth and development of newborns. It is considered a complete food, ensuring immunological protection and nutritional guarantee for the infant. Early weaning is a recurring practice that negatively influences the child's development. Among the factors that influence weaning are the belief that milk is weak, returning to work and breast problems. As a result, the use of infant formulas in early childhood has been gaining ground, with negative impacts on the baby's life if not used correctly with the help of a qualified professional. This study aims to review the importance of exclusive breastfeeding up to six months of age, the main causes of early weaning and the use of infant formulas in early childhood. This is an Integrative Literature Review, searched in the *PubMed* and *SciELO* databases, in order to obey the inclusion criteria: articles in Portuguese and English, between the years 2020 and 2024, following the specific descriptors. A total of 750 scientific articles were found, of which only 6 met the inclusion criteria and were used for the study. The results showed that the benefits of breastfeeding for infants are indisputable, and that early weaning can be caused by maternal insecurity, schooling, marital status, lack of information from health professionals and the context in which the mother is inserted. It was concluded that the importance of breastfeeding is undeniable, as it is the best food for infants and brings benefits well into adulthood. The factors that interfere with the duration of breastfeeding are cultural, socio-economic, historical and personal.

Keywords: Breastfeeding. Early Weaning. Infant formulas.

INTRODUCTION

Early childhood has a major influence on the other stages of life. Breastfeeding, which is recommended from birth to two years of age, and the introduction of complementary feeding from six months of age have short and long-term consequences for the individual. Exclusive breastfeeding (EBF) is the period in which the child receives only breast milk, straight from the breast or milked, or human milk from another source, with no other liquids or solids, with the exception of drops or syrups containing vitamins, oral rehydration salts, mineral supplements or medicines¹.

However, there are a variety of formulas on the Brazilian market that offer a complete range of nutrients, but with different characteristics². These formulas become important when the infant cannot be breastfed and are intended to nourish and help the baby's development. However, their use without recommendation can cause damage to the child's nutritional status, with an increased risk of various pathologies appearing, damage in adulthood and in society, due to the family budget³.

Breastfeeding is of the utmost importance for a child's development and growth, as human milk is a complete food suitable for infant consumption, adequate in energy, macro and micronutrients needed by the baby¹. The World Health Organization (WHO) recommends exclusive breastfeeding until the sixth month of life and complementary feeding until two years of age or older.

Early weaning can result in diseases that could be avoided with breastfeeding, such as diarrhea and malnutrition. In Brazil, the number of children who consumed only breast milk until they were six months old is small in relation to what is recommended by the WHO. Only 41% had EBF⁴

In this context, it is important to know the risks generated by early weaning, as well as the impacts on the baby's development. As in the health sector, this issue should be discussed in all areas of society, as the lack of breastfeeding at the beginning of a child's life, a phase in which growth and development occur, has become increasingly common⁵.

The interruption of breastfeeding causes a lack of nutritional, immunological and emotional benefits, leading to inadequate child development, a lack of mother-baby bonding, susceptibility to contracting infections, being prone to mortality, and the development of mental and emotional problems⁴.

This led to the following guiding question: What is the importance of exclusive breastfeeding for newborns up to six months of age and why is early weaning and the use of infant formulas occurring earlier than recommended?

Therefore, this article aims to review the importance of exclusive breastfeeding up to six months of age, the main causes of early weaning and the use of infant formulas in early childhood.

THEORETICAL FRAMEWORK

BREASTFEEDING

The first thousand days of life, the period from conception to the end of the baby's second year of life, are very important due to their impact on health, since nutrition during this stage can contribute to increasing or reducing the risk of diseases and comorbidities throughout life⁶.

According to the Ministry of Health⁷, there are three stages of breast milk: colostrum, transitional milk and mature milk. Colostrum is the first milk produced, secreted in the first few days after birth. It is rich in protein, with lower amounts of lactose and fat. It also contains vitamins and immunoglobulin - IgA, an important antibody that helps protect the

newborn against microorganisms present in the birth canal. Transitional milk is milk produced between the 6th and 15th day after the baby is born, when the woman's body starts to produce a thicker, more voluminous milk, called transitional milk. It is rich in fats and carbohydrates. Mature milk begins to be produced around the 25th day and has a consistent, whitish appearance. It is made up of proteins, fats, carbohydrates and other nutrients.

It is very important to know and use the definitions of breastfeeding adopted by the WHO and recognized throughout the world. Thus, breastfeeding is usually classified into five groups according to the Ministry of Health:¹.

- 1) **Exclusive breastfeeding:** when the child receives only breast milk, either straight from the breast or milked, or human milk from another source, with no other liquids or solids, with the exception of drops or syrups containing vitamins, oral rehydration salts, mineral supplements or medicines.
- 2) **Predominant breastfeeding:** when the child receives water or water-based drinks (sweetened water, teas, infusions), fruit juices and ritual fluids in addition to breast milk.
- 3) **Breastfeeding:** when the child receives breast milk (straight from the breast or milked), regardless of whether or not they receive other foods.
- 4) **Complementary breastfeeding:** when the child receives, in addition to breast milk, any solid or semi-solid food with the aim of complementing it, not replacing it. In this category, the child may receive another type of milk in addition to breast milk, but this is not considered complementary food.
- 5) **Mixed or partial breastfeeding:** when the child receives breast milk and other types of milk.

The WHO and the Ministry of Health recommend exclusive breastfeeding for six months and complementary feeding up to two years of age or more, as there are no advantages to starting complementary feeding before six months of age, which may even be detrimental to the child's health. The early introduction of other foods is associated with higher incidences of diarrhea, a greater number of hospitalizations for respiratory diseases, a high risk of malnutrition if the foods introduced are nutritionally inferior to breast milk, lower absorption rates of important nutrients such as iron and zinc, a reduction in the effectiveness of lactation as a contraceptive method and, consequently, a shorter duration of breastfeeding¹.

It is recommended that breastfeeding be started early, prioritizing the first 60 minutes after giving birth. This first hour is essential for the child's growth and development, providing immediate and long-term benefits. The short-term benefits include better interaction between mother and baby, higher glucose levels and increased gastrointestinal motility. There are many difficulties for women in breastfeeding. These include the presence of nipple pain, breast engorgement, nipple lesions, fatigue and feeling tired. These factors indicate difficulties with breastfeeding technique, as well as problems with sucking and latching on, baby fussiness and the mother's perception of insufficient milk supply⁸.

The decline in infant mortality in Brazil is the result of a number of factors, especially the increase in breastfeeding rates, given that, worldwide, breastfeeding reduces deaths of children under five from preventable causes by up to 13%⁹.

The vast majority of women are biologically able to produce enough milk to meet their child's needs. Until the so-called let-down, which usually occurs on the third or fourth day after giving birth, milk is produced

by hormones and occurs even if the child is not sucking on the breast. From then on, milk production basically depends on the emptying of the breast, i.e. it is the number of times a day the child suckles and its ability to efficiently empty the breast that will determine how much breast milk is produced by this woman. The volume of milk produced during established lactation varies according to the child's demand. On average, a woman who is exclusively breastfeeding produces 800 ml of milk a day. However, women's milk production capacity is usually greater than their children's needs, which explains the possibility of exclusive breastfeeding of twins and the extra milk produced by women who donate human milk to milk banks¹.

It is known that pregnant women who receive adequate guidance during prenatal and puerperal care develop greater confidence and ease in the breastfeeding process. It is therefore extremely important for pregnant women to be encouraged to breastfeed their babies and to be informed about the benefits of breastfeeding. The trust developed by the mother towards her baby is a relevant factor in the early start of breastfeeding. Breastfeeding in the first hour after birth on demand, the child's stay in the hospital room, the intervention of qualified health professionals in the event of breast complications and the restriction of supplementation for infants are listed as protective factors for in-hospital breastfeeding⁸.

There are specific substances in breast milk that inhibit milk production, and it is their removal by emptying the breast that ensures that the removed milk is completely replaced. Any maternal or child factor that limits the emptying of the breasts can cause a decrease in milk production. Poor latch-on is the main cause of inefficient milk removal. Infrequent and/or short feeds, breastfeeding at set times, no night feeds, breast engorgement, the use

of supplements, pacifiers and nipple shields can also lead to inadequate emptying of the breasts. Measures to increase milk production include improving the baby's positioning and latching on, when this is not adequate; increasing the frequency of feeds; offering both breasts at each feed; giving the baby time to empty the breasts properly; changing breasts several times in a feed if the child is drowsy or does not suck vigorously; avoiding the use of bottles, pacifiers and nipple shields; eating a balanced diet; drinking enough fluids and resting¹.

EARLY WEANING

Early weaning is still a very common problem and is defined as the total or partial abandonment of breastfeeding before the baby is six months old, the causes of which can be linked to culture, lifestyle and the influence of society. In addition, the decline in breastfeeding has been known around the world since the industrial revolution at the end of the 20th century, when industrialization and urbanization included women in the labour market, and new discoveries of milk were relevant factors in early weaning¹⁰.

One of the reasons mothers give for introducing other milks into their children's diets is the perception of insufficient quantity and low quality of breast milk, as well as family wishes or interference¹¹.

Often the reasons for supplementing breast milk mentioned by mothers include conditions related to the infant, such as prematurity, pathology or hypoglycemia, a mother with little milk or a child who has difficulty sucking, hospital routine and maternal use of medication. Thus, the way in which breastfeeding takes place at the time of hospital discharge is shown to be one of the main factors in discontinuing breastfeeding in the first six months of life¹².

Another factor that can interfere with the duration of exclusive breastfeeding is maternal smoking. The act of smoking is recognized by many smoking mothers as being a risk for their babies, however, in general they feel little encouragement to give up the practice¹³.

Various studies¹⁴ have mentioned the use of pacifiers and bottles, family interference, the early introduction of tea and water, maternal labor, the belief that the child's milk is insufficient, problems such as breast engorgement and mastitis, low family income and a lack of guidance on breastfeeding as factors that negatively affect the duration of breastfeeding, leading to early weaning. Mothers' misinformation about the introduction of water and tea into the child's diet, believing that they are necessary for the child due to thirst, is the justification given for the early introduction of these liquids. However, breast milk is a complete food that also provides water, and is able to maintain the child's hydration and act as a protective factor against common childhood infections¹⁵.

The mother's lack of patience, the fear of breast modification, negative experiences by some mothers about breastfeeding, are all emotional factors that lead to weaning, showing that it does not occur in isolation¹⁶.

On the other hand, professional guidance during childcare visits is a positive factor in the duration of exclusive breastfeeding, as is the puerperal home visit, an essential moment to transform and strengthen breastfeeding¹⁷.

However, it is still worth noting that the greatest difficulties encountered by mothers during breastfeeding are related to lack of support, the mother's health, her physical disability, lack of information and the care routine adopted by the maternity hospital. In addition, the lack of guidance during prenatal care is the main cause of early weaning among breastfeeding mothers, as is skin-to-skin contact in the first few hours after giving birth and the use of pacifiers¹⁸.

The reasons given by mothers for weaning or introducing other foods can be grouped by area of responsibility: mother's organic deficiency, problem with the baby, attribution of responsibility to the mother and influence of third parties, demonstrating that there are no isolated causes for establishing the course of breastfeeding, but rather a relationship of associated factors between the mother, the newborn and the context in which they find themselves in a given space-time dimension¹⁰.

Many women may find it difficult to adapt to breastfeeding due to so many changes in the body, as well as psychological changes. The onset of depression postpartum can lead to an experience of breastfeeding that is unpleasant and can even be harmful, thus leading to a lack of desire to breastfeed and giving up the act of breastfeeding¹⁹.

According to Silva¹¹, stopping breastfeeding early can also change the quality of life of the whole family, as it influences the financial factor and other various areas of life, such as biological, emotional, physical and social. In addition, there are myths among mothers who report that their milk is weak or that they don't have enough to feed their child and leave them satisfied, and so they ask health professionals for milk formula to supplement this deficit.

Therefore, children who are exclusively breastfed up to six months of age have a better quality of life than those who are weaned early or receive other types of food before the ideal period, and it has been observed that these children have poorer health, fall ill more often and take longer to recover their health¹⁰.

USE OF INFANT FORMULAS

Infant formulas (IF) were created to resemble breast milk, but their composition does not match the physiological properties of this milk, which are specific to the mother for her child. The sources of carbohydrates, proteins and other components present in infant formulas differ in identity and quality from the components of human milk⁹.

However, breastfeeding is not always possible and it is sometimes necessary to use these formulas to meet the infant's nutritional needs. Current legislation guarantees the safety of IFs, defining the standards that must be adopted in terms of their composition, labeling, advertising and marketing. This nutritional composition has to comply with the legally established criteria regarding the food ingredients that can be used to make them, the minimum and maximum levels of micro and macronutrients they contain and the functional nutrients (such as nucleotides, LC-PUFAs and pre-, pro- and symbiotics) allowed²⁰.

Starter infant formulas (for infants from birth to six months), follow-up formulas (for infants from 6 months) and early childhood formulas (for children aged 1 to 3 years) follow the strict requirements of the National Health Surveillance Agency (ANVISA) to obtain their registration²¹.

The infant's age group determines their nutritional needs. However, in order to ensure their correct development, IF not only needs to be adapted to each stage of growth, but also to ensure food sensitivity and the metabolic changes that may exist²⁰.

According to the Ministry of Health's guide for health professionals, published in 2009, there are "justifiable" reasons for offering infant formula. Among them, it mentions those related to the newborn and those related to the mothers. With regard to cases related to babies, formulas should be offered in some cases, such as: galactosemia, because lacto-

se needs to be eliminated from the diet, and lactose-free formulas are offered; cases of phenylketonuria, where babies do not necessarily need to be deprived of breast milk, but frequent dosing of phenylalanine in the blood is necessary; preterm or very low birth weight newborns, where the baby's condition is assessed on an individual basis, and in some of them it is necessary to introduce formulas to gain weight more quickly¹.

With regard to cases related to mothers (which are more frequent), infant formulas should be offered mainly when there is use of drugs and other substances, such as alcohol, drugs of abuse or illicit drugs. In general, there needs to be an assessment of use, quantity and the mother's ability to care for the baby, whether or not they are drug-dependent. In these cases, breastfeeding is not recommended and formula feeding is necessary. For those who use drugs occasionally, it is recommended to stop breastfeeding, milk and discard the milk after 24 to 36 hours of use, and the introduction of formula during this period is recommended. In the case of alcohol use in small quantities, you should wait 3 to 4 hours before breastfeeding, assessing the need to introduce artificial feeding during this period. Another reason for using infant formula is in the case of maternal infections, such as HIV-positive mothers, herpes simplex (when there are apparent breast lesions), Chagas disease (in the acute phase of the disease) and breast abscess (if both breasts are affected)¹.

It is also important to point out that the use of infant formulas is essential if breastfeeding or relactation is impossible, because when compared to whole cow's milk, they have better brain, intestinal and immune system development. In addition, when whole cow's milk is offered in the first year of a baby's life, it can lead to changes in the intestinal microbiota and an increase in obesity, due to its excess protein, sodium, potassium and chlorine, as

well as a lack of vitamins and minerals that are important for the baby's development. As a result, the use of infant formulas, although qualitatively incomparable to breast milk, can bring benefits in cases where breastfeeding is not possible²².

METHODOLOGY

This is an integrative review study aimed at reviewing the importance of exclusive breastfeeding up to six months of age, the main causes of early weaning and the use of infant formulas in early childhood.

To do this, we used complete scientific articles from randomized controlled clinical studies in Portuguese and English. For data collection, a search was carried out in the *PubMed* and *SciELO (Brazil Scientific Electronic Library Online)* databases, with a time frame of 5 years.

The inclusion criteria used were articles that talked about the nutritional importance of exclusive breastfeeding; the use of infant formulas among newborns and early weaning in the age group up to 6 months; publications in Portuguese and English.

Articles that were not in Portuguese or English and those with a time frame of more than 5 years were excluded.

To select the descriptors, we consulted Boolean descriptors and selected the following: *breastfeeding AND/OR infant formulas AND/OR early weaning AND/OR food*, as well as their English counterparts: *breastfeeding AND/OR infant formulas AND/OR early weaning AND/OR food*.

To choose the articles, the titles and abstracts of all the publications found by the research method were carefully read to check that they met the inclusion criteria, answering all the options on the form. We then went on to read the full text of each selected article pre . At the end of each study, a reading sheet was organized to collect information and screen

the material with a procedure for extracting data from primary sources, using an organized tool to simplify, synthesize and prepare the findings, containing: reference, objective, methodology and main results of the study.

As this is a literature review, this study did not need to go through the Research Ethics Committee. However, it strictly followed the content of the publications, and all the sources used were cited in accordance with the standards of the Brazilian Association of Technical Standards (ABNT)

RESULTS

The initial search in the selected databases, using all the descriptors, resulted in a total of 750 scientific articles. After adopting the inclusion criteria, 239 articles were found. The titles were then read and duplicates excluded, resulting in 22 articles. Of these, 16 studies were excluded because they did not answer the guiding question. Therefore, only 6 articles were included in this review. The selection of articles is shown in the flowchart (Figure 1).

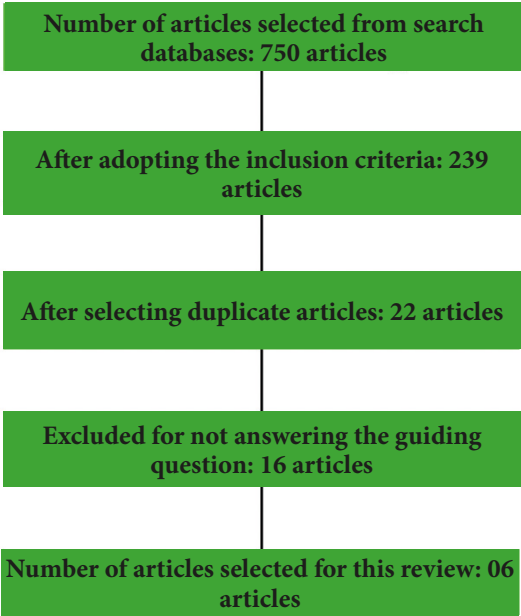


Figure 1. Flowchart of the selection of studies for the literature review.

Tables 1a and 1b show the main results of the articles included in the review, which were published between 2020 and 2024.

The main outcomes reinforce that the practice of breastfeeding should always be encouraged, due to the protection, bonding, nutrition and other benefits already mentioned. Early weaning and the use of infant formula are caused by maternal insecurity and fear, the mother’s unpreparedness, breast complications, family context, the use of pacifiers, lack of information from health professionals, among others

In terms of methodological quality, we used clinical trials, epidemiological studies with a cross-sectional design, descriptive field research with a qualitative approach, qualitative research, exploratory quantitative cross-sectional studies, randomized controlled clinical trials and cross-sectional studies.

DISCUSSION

Breast milk is a complete food, containing vitamins, minerals, carbohydrates, proteins, fats, enzymes, antibodies, among others, which undergoes changes throughout the breastfeeding period in order to adapt to the needs of the newborn²³.

Breastfeeding is a fundamental human right and directly affects infant mortality patterns and the health of populations. Its benefits are extremely important, acting to prevent diseases such as diarrhea, respiratory infections, chronic non-communicable diseases in adulthood and increasing the level of intellectual development of the child who is breastfed²⁴.

According to the studies analyzed, two articles^{(2) (5) (2) (6)}, showed that maternal insecurity and fear are important factors in early weaning, also reporting that more experienced women are more likely to adhere to breastfeeding than primiparous women. Similarly, Faria and Ferreira²⁷ in their study reported that the idea of insufficient milk and maternal inability to bre-

NO.	Author and Year	Objective	Journal	Type of Study
1	KCLR, Pinto; LFC, Silva; PS, Ribeiro; et al, 2020 ²⁵	To identify the prevalence of early weaning and its main causes, and to propose measures that can help mothers cope with situations that lead to weaning.	SciELO	A cross-sectional epidemiological study.
2	TN, Cardosoq; ML, Nunes; AJV, Santos; et al, 2024. ²⁶	To describe an integrated perception of the reasons that led women to stop exclusive breastfeeding before the sixth month of lactation.	SciELO	Descriptive field research with a qualitative approach.
3	DMRS, Zava, ES, Contarine, RA, Baptistini; 2020. ²⁹	To understand the determining factors for non-adherence to or interruption of exclusive breastfeeding among infants in the municipality of Cachoeiro de Itapemirim-ES.	SciELO	Qualitative research.
4	FG, Cândido; BAC, Freitas; RCS, Soares, et al. 2021. ³³	To characterize the situation of breastfeeding and the adequacy of the prescription of infant formulas to infants assisted by a Secondary Care program of the Unified Health System.	SciELO	Quantitative exploratory cross-sectional study.
5	DM, Bond; AW Shand; A, Gordon; et al, 2021. ³⁰	To prospectively determine the rates and factors associated with the type and duration of breastfeeding in the first year and to examine the effect of minimal supplementation.	Pubmed	Randomized controlled clinical trial.
6	DAK, Freitas; T, Pires; BS, Willges, et al, 2022.³⁴	To estimate the prevalence of exclusive breastfeeding (EBF), the introduction of water, teas or other milks, as well as to identify the factors associated with the interruption of EBF at 30 days of life.	SciELO	Cross-sectional study.

Table 1a: Characteristics of the studies analyzed to review the importance of exclusive breastfeeding, the main causes of early weaning and the use of infant formulas in early childhood.

NO.	Methodology	Results	Conclusion
1	Cross-sectional epidemiological study. The study was carried out at the Maria Haddad Haidamus nursery school, which caters for children aged 0 to 5. 60 mothers of children aged between six months and one year who were enrolled at the daycare center were invited to participate. Data was collected through interviews with semi-structured questions	90% of the mothers in the study population answered that they breastfed. The arithmetic mean breastfeeding time was 6.36 months. In the variable “Reason for early weaning”, there were three causes of early weaning in less than six months self-reported by the mothers: “Introduction of other foods”, “Insufficient milk” and “Work”.	Early weaning, even though it affects a minority of mothers, is still representative and is caused by mothers reporting that their milk is not satisfying their children's hunger, generating insecurity and fear, and from this they introduce baby food and other foods, and their return to work means that they don't have time to exclusively feed their children with breast milk.
2	The setting for this study was in the municipality of Balsas - MA. This was a descriptive field study with a qualitative approach. It was carried out in the two Family Health Strategies (ESF) in the Potosi neighborhood, located in the urban area, which was selected because it had a high demand when compared to other basic health units. Twenty-five women who used the public health system and had children up to 2 years old were interviewed, using a form to characterize their sociodemographic profile.	It is possible to consider that mothers with a higher level of schooling have more facilities for Mothers' lack of knowledge leads to decisions that interfere with breastfeeding. Many mothers give their children liquids, believing that they are nourishing their babies in the right way. Schooling interferes with the absorption of information provided by health professionals, immaturity and lack of desire to become pregnant contribute to a lack of interest in learning about motherhood.	The health professional needs to understand the context in which the mother is inserted, the experiences she has had during another lactation, or if she is experiencing this phase for the first time, her marital status, the family environment in which she is inserted, in order to guide the patient according to her uniqueness. Understanding the level of education of pregnant women, puerperal women and breastfeeding women helps professionals to teach them about exclusive breastfeeding, breastfeeding techniques, latching on and positioning the baby when feeding. These guidelines may seem simple to health professionals, but they are essential for them to avoid problems that make breastfeeding difficult.

3	<p>This was a qualitative study carried out in two Basic Health Units (BHU) located in the municipality of Cachoeiro de Itapemirim-ES. They are part of the Family Health Strategy (FHS) and are made up of multi-professional teams who monitor the health situation of the participants in the study. The participants were 15 women with children up to 06 months old living in the area covered by these basic health units. The data collection instrument used was an interview with a semi-structured script.</p>	<p>It was observed that the majority of the women interviewed are housewives, which should encourage breastfeeding. However, the figures showed that even though these women are housewives and having more flexible working hours, breastfeeding rates were low, showing that profession/occupation was not the only factor responsible for early weaning. As for the practice of breastfeeding, 73.33% of the women investigated are currently breastfeeding, while 26.66% stopped breastfeeding completely before the child was six months old.</p>	<p>The decision to stop exclusive breastfeeding can be linked to factors such as marital status, with single mothers being more susceptible to early weaning; low maternal schooling, which is generally associated with low socioeconomic status and less access to health services; low family income; maternal feelings of insecurity and/or fear relation to breastfeeding and possible breast complications, especially in primiparous women.</p>
4	<p>This is a cross-sectional study analyzing the medical records of 350 infants aged between zero and 6 months, monitored between February and April 2019. It was carried out at the State Center for Specialized Care (CEAE) in the municipality of Viçosa (MG) and referred to the CEAE by the Milk for All Program.</p>	<p>The possibility of breastfeeding was present in 97% of the mothers assessed, and no infant had a medical condition acceptable for proscribing breastfeeding. It was found that 92% (n=149) of the patients used infant formula before being referred to the CEAE and continued to use it after being monitored at the center, while 54% (n=94) of those who did not use it before the start of monitoring continued without this prescription. Thus, there was an association between the use of infant formula prior to referral to the CEAE and the continuation of the practice after follow-up at the center, demonstrating that the early introduction of formulas hinders the resumption of exclusive breastfeeding.</p>	<p>The high rates of prescription of infant formula in the population studied were worrying, given that breastfeeding is well below the national average and because these were people being cared for by health professionals from the Unified Health System. In addition, the patients assisted were at high medical and nutritional risk, according to the criteria for referral to the center, and should not be deprived of the health, emotional, social and economic benefits of breastfeeding. The low rate of exclusive breastfeeding and the indiscriminate prescription of infant formulas are worrying because they cause damage to maternal and child health and to the finances of the Unified Health System.</p>
5	<p>Prospective study of live births between April and June 2015. Conducted in Sydney, Australia and included 635 women with uncomplicated term births who intended to breastfeed. Data was collected daily for 56 days and then at 2, 6 and 12 months after delivery.</p>	<p>Breastfeeding outcomes were assessed for 553 (87%), 480 (76%) and 392 (62%) women at 2, 6 and 12 months. Exclusive breastfeeding was 81% at 2 months and 8% at 6 months. Partial breastfeeding was 75% at 6 months and 54% at 12 months. Factors associated with cessation of breastfeeding included cesarean delivery, low milk supply, latch-on problems, increased time to breastfeed, use of formula > 7 days in the first 2 months, return to work and early introduction of solids. Breast pain in the first week was associated with a 10% reduction in exclusive breastfeeding. Cracked nipples and no previous experience with breastfeeding were associated with < 7 days supplementation, but had no effect on the duration of long-term breastfeeding.</p>	<p>Exclusive breastfeeding decreased significantly between 2 and 6 months after delivery. Early intervention and education to extend the duration of breastfeeding should include strategies to manage breast pain and nipple damage to minimize prolonged supplementation. Consistent guidelines on the introduction of complementary foods, improved maternity leave and workplace incentives can be effective in prolonging breastfeeding.</p>
6	<p>A cross-sectional study using structured, pre-tested questionnaires administered to 310 mothers at two points in time: in the maternity ward, and at 30 days of the child's life, by telephone. Descriptive statistics and multivariate Poisson regression, following a multilevel hierarchical model according to proximity to the outcome, estimated the association between the dependent and independent variables.</p>	<p>Breastfeeding was maintained at 30 days of age in 85.2% of the sample, and 1.6% received water, 11.5% teas and 8.2% other milk. Predictors of stopping breastfeeding in the univariate analysis were mothers returning to work or study soon after the birth of the baby and the use of a pacifier. Breastfeeding cessation was lower in the group of participants who received support from the infant's maternal grandmother (RI 2.71; 95%CI 1.11-6.56) and partner (RI 4.78; 95%CI 1.90-12.06). After multivariate analysis, only pacifier use (RI 5.47; 95%CI 2.38-19.3) and partner support (RI 6.87; 95%CI 2.04-23.1) remained associated with the outcome.</p>	<p>The prevalence of EBF found in this study can be considered good, and future interventions aimed at increasing the duration of EBF in this population should take into account the participation of the partner and reinforcement for not introducing the pacifier.</p>

Table 1b. Characteristics of the studies analyzed to review the importance of exclusive breastfeeding , the main causes of early weaning and the use of infant formulas in early childhood.

Source: Author's own elaboration (2024).

astfeed the newborn stem from negative cultural influence, which generates discomfort, anxiety and maternal stress, when associated with mismatched latches, incorrect sucking and shorter feeds, which can modify the maternal biological system and inhibit milk production, these being aggravating factors for early weaning. These data corroborate the results found in a study carried out in a Basic Family Health Unit in the municipality of Campina Grande/PB, where the belief of insufficient milk is due to the fact that the mother doesn't feel her breasts are full, as well as reduced milk production in the first few days of the puerperium, which leaves her worried and fearful about her ability to produce the appropriate volume of milk for the child's growth and weight gain²⁸.

In addition, two other studies by Zava *et al*²⁹ and Bond *et al*³⁰ found that breast problems such as pain when breastfeeding and damage to the nipples are associated with the cessation of breastfeeding. In this context, Baier *et al*³¹ also identified breast problems as one of the crucial factors in weaning, the cracks and fissures caused by the pressure of the baby's mouth on the areola when the grip is incorrect, causing pain, discomfort and stress for the mother. Similarly, Marques³² states in her study that problems such as mastitis, fissures and breast cracks are a threat to exclusive breastfeeding, where these problems develop in the first few days of lactation. It is caused by the newborn sucking or latching on incorrectly. Mastitis is also frequent in the first few days after childbirth, and is the result of excessive production of breast milk, which is not extracted by the baby or is manually accumulated, causing pain in the area, thus damaging breastfeeding and resulting in early weaning.

It is also worth mentioning other factors shown in this study, such as marital status, low maternal schooling, use of pacifiers, increased prescriptions for infant formulas and lack of understanding by health professionals of the context in which the mother is inserted, as

presented in the studies by Zava *et al*²⁹, Candido *et al*⁽³⁾⁽³⁾, and Freitas *et al*⁽³⁾⁽⁴⁾.

In relation to low maternal schooling associated with weaning, a study by Tavares *et al*.³⁵ found a higher prevalence of breastfeeding interruption in mothers with higher levels of schooling. Due to their higher educational level, mothers are probably working in the labor market, which limits the time they spend breastfeeding. Those with a higher level of education usually have more access to information about the importance and benefits of breast milk for infants, unlike those with low levels of education.

The study by Candido *et al*³³ showed high rates of prescription of infant formulas, which is worrying, as these are people who are assisted by health professionals. This situation is also mentioned in the study by Pinheiro *et al*³⁶, which assessed the prevalence of food supplement use in newborns and the reasons for their use. The study found that 64 babies were prescribed/requested infant formula in the first 6 hours of life, without most of them having justifiable reasons for giving it or any indication that would prevent them from breastfeeding. In association with this, it was noted that of the 213 babies who received the supplement, 23.9% also did not present reasons in their medical records for this offer. It is therefore necessary to reflect on these requests/prescriptions without justifiable reasons. It should also be noted that the complementary use of infant formula should be carefully evaluated, as the prescription of breast milk substitutes in maternity wards can encourage mothers to do the same when they return home, believing that they are unable to produce enough milk for their newborn³⁷. However, Zava *et al*²⁹ reported in their study that many puerperal women receive medical indications for the use of formulas and these indications are associated with issues of the impossibility of safe and secure breastfeeding, such as the association with the use of illicit drugs.

With regard to marital status, it has been observed that in studies where women have a steady partner or partner, this factor facilitates childcare, which also contributes to the division of tasks, as well as to mutual support between the couple³⁸. Other studies have shown that paternal presence is a determining factor in successful breastfeeding³⁹. While the father's non-involvement in pregnancy and lactation can create conflict between the couple, causing insecurity, it is essential that the man understands this new phase in the woman's life and does not feel excluded, being able to position himself as a contributor to maternal self-esteem⁴⁰. In addition, a systematic review also pointed out that including partners in breastfeeding interventions improves the rates of breastfeeding initiation, duration and exclusivity⁴¹.

Unlike marital status, such as stable union or marriage, single and divorced mothers have to deal with greater pressure imposed by society due to the absence of a father, which becomes an aggravating factor for these women's emotions. Their financial situation has a direct influence on the future of lactation and because they don't have an adequate support network, they find it more difficult in this new phase, which can lead to early weaning due to the need to return to work¹¹.

The use of pacifiers has been the subject of epidemiological surveys in order to identify possible benefits or harms when used in children, and has already been associated with a reduction in the duration of breastfeeding and an increase in the child's risk of developing acute otitis media, gastroenteritis, masticatory dysfunction and dystocclusion²⁷. On the other hand, a meta-analysis published in 2017 found a strong protective effect of pacifier use for sudden infant death⁴². However, the introduction of this resource in breastfed babies with risk factors for sudden death should be postponed until breastfeeding is well established, which is usually after the first month of life^{43,44}. It is

also worth noting that pacifier use in itself can reduce the duration of breastfeeding. Pacifiers are introduced as a result of breastfeeding difficulties, and the baby's personality and mother-baby interaction mean that mothers use the pacifier as a way for the child not to spend so much time at the breast, to calm down or sleep more easily, and the profile of mothers and their families determines the choice between breastfeeding and avoiding the pacifier⁴⁵.

When it comes to health guidance from qualified professionals, according to Cardoso *et al*²⁶ even though mothers have received information about breastfeeding during prenatal care from health workers, nurses, doctors and nutritionists, most of them wean early. According to Bauer *et al*¹⁷, prenatal education with the provision of support material (books or leaflets) helps to significantly reduce pain and nipple trauma, and is a protective factor against early weaning. Similarly, the intervention of the multi-professional team, while still in the prenatal period, ensures greater encouragement of lactation, clarification of correct latch-on techniques, proper positioning of the baby, explanations of why not to offer water, tea, formula, bottles and pacifiers, which is important information, as they may be inexperienced in this practice, thus aggravating their fragility in breastfeeding^{46,47}.

In view of the above, there are many factors that lead to the interruption of breastfeeding, which can result in various deficiencies in the child's health, such as the risk of infections, the development of allergies, difficulties in digestion and the introduction of food earlier than recommended. In addition to affecting the binomial bond between mother and baby that is formed during breastfeeding, early weaning affects the lives of both the baby and the mother⁴⁸.

The practice of breastfeeding should always be encouraged, due to the protection, bonding, nutrition and other benefits already

mentioned. Breastfeeding interruption and/or substitution causes the loss of benefits and some nutrients that only breast milk has^{49,50}.

CONCLUSION

This study, which used an integrative review as its research method, showed that the importance of breastfeeding is indisputable, as it is the best food for infants, bringing benefits well into adulthood, guaranteeing adequate nutrition, strengthening the immune system and protecting against diseases.

Among the various factors that influence early weaning, the main ones found were maternal insecurity, breast problems, the mother's return to work, marital status, early introduction to food and the prevalence of pacifier use.

It is therefore necessary to reinforce the importance of health professionals, such as nutritionists, nurses, doctors, social workers and health agents, in providing guidance and information during prenatal and postpartum care. In the first few hours of mother-child contact, more help is needed due to the difficulties and doubts that may arise in the first few days.

The findings of this study could contribute to the implementation of strategies to promote exclusive breastfeeding, as well as alerting mothers, their families and health professionals to the possible determinants identified here. The importance of further studies to enrich the subject and for new public policies to help support the encouragement of exclusive breastfeeding until the baby is six months old is emphasized.

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