

Breastfeeding in the First Year of Life: The Situation in Romania in the European Context

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Abstract: (1) Background: Exclusive breastfeeding is not only the cornerstone of a child's healthy development, but it is also the most economical and planet-friendly way to feed an infant. This study aims to assess the current situation regarding breastfeeding in Romania. (2) Method: The authors searched five databases using the search terms "breastfeeding OR lactation" AND Romania. Studies have been limited to those published in English since 2000. In vitro animal studies, case studies, reviews, meta-analyses, book chapters, and guidelines were excluded. (3) Results: 19 studies were included in the final review. For the purpose of this systematic review, studies were subgrouped into studies on attitudes, practices, and behaviors regarding breastfeeding and the composition of human milk. This review demonstrates a slight tendency to increase interest in breastfeeding in Romania in the last years. Interventional studies conducted so far included mainly urban populations with good socioeconomic levels and a high level of education. Studies about the impact of early intervention in maternal education concluded that the level of education is positively correlated with the interest in education regarding breastfeeding. On the other hand, the Romanian population has similar characteristics to the European population in terms of the factors that influence human milk composition. (4) Conclusions: The review underlines strengths and weaknesses of the Romanian situation regarding breastfeeding and makes recommendations for future directions for research and health education.

Keywords: breastfeeding; infant; educational status; Romania; health knowledge; human milk; climate change; environmental sustainability



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1. Introduction

Breastfeeding not only reduces mortality [1], but it is also an important protective factor against childhood obesity [2], being considered a significant factor in the health of the child [1,3].

Globally, the rates of breastfeeding remain lower than what The World Health Organization (WHO) and United Nations International Children's Emergency Fund (UNICEF) set as a target.

According to the Global Breastfeeding Scorecard 2022, from 2015 to 2021, only 47% of newborns initiated breastfeeding in the first hour after birth. Also, only 48% of infants under 6 months were exclusively breastfed [3]. Therefore, between 2005 and 2019 the percentage of feeding with breast milk substitutes has increased in both low- and high-income countries, noting the study conducted in 2020 [4].

There are studies on the use of breast milk substitutes and the impact on carbon and water footprint [5], but other categories have not been sufficiently studied.

Exclusive breastfeeding is not only the cornerstone of a child's healthy development, but it is also the most economical and planet-friendly way to feed an infant [6].

Is breastfeeding sustainable?

Human milk does not require processing, nor does it require energy for production or transport, or other energy sources that lead to pollution [7]. Human milk does not produce waste material and does not need packaging, noting a study conducted in 2016 [7]. The source of the carbon footprint is generated by the production and transport of food for mothers. A breastfeeding woman requires an additional 300–400 kcal/day compared to a woman who does not breastfeed [8]. When we refer to breastfeeding, we refer to exclusive breastfeeding because breastfeeding with pumped/expressed human milk uses minimal resources necessary to sterilize utensils.

A recent study (from 2022) states that exclusive breastfeeding is an environmentally untapped service, not monetized, and most often excluded from food production statistics [9]. The value of breastfeeding is measured by the negative effects of formula consumption like economic impact and environmental issues, such as carbon footprint and water footprint [9,10]. The promotion of breast milk substitutes has led to a 115% increase in sales worldwide in 15 years [4].

A Norway study conducted in 2022, which determined the consequences of feeding children with infant formula or human milk, concluded that the environmental impact rose by 24–60% for every 1 kg of formula compared to human milk [6]. Also, it was observed an increase in global warming by 38%, terrestrial acidification by 72%, eutrophication in freshwater by 35% and marine waters by 59%, and land use by 53% as a consequence [6].

The value of breastfeeding is immeasurable. Measuring per capita production of human milk may create databases for assessing a country's trends, being of major importance for economic, health, and nutrition, and through breastfeeding, mothers contribute to achieving the Sustainable Development Goals much more easily [9].

The literature states that exclusive breastfeeding is sustainable, being the source of food with almost zero ecological impact [7,10].

Eating behavior and attitude toward healthy foods are influenced by the mother. Collective efforts can lead to changes in behavior and attitudes and raise awareness of the influence of breastfeeding on the environment [10]. Maternal eating behavior and breastfeeding may influence children's subsequent food choices [11].

In 2020, UNICEF initiated the "Support Breastfeeding for a Healthier Planet" campaign during Breastfeeding Week, calling on government units to promote, protect, train, ensure, and collaborate so that mothers can give the best start to their children [12].

Understanding the barriers and attitudes that lead to low breastfeeding outcomes and determine mothers' behavioral patterns could increase interest in breastfeeding and thereby achieve UNICEF's goals on sustainability and building resilience [13].

Studies conducted so far suggest that the level of education is positively correlated with the exclusivity and duration of breastfeeding; moreover, early intervention in maternal education and the involvement of medical staff are positively correlated with increases in breastfeeding rates [14].

The decision to breastfeed is influenced by previous breastfeeding experience and education [15], while the decision to continue breastfeeding is influenced by the contribution of healthcare professionals [16].

In one of the recent studies, the mothers' knowledge about breastfeeding was the primary factor influencing breastfeeding outcomes [17]. As mothers tend to wean early in the first six months, it is necessary to intervene early on these factors, primarily on knowledge and on support of breastfeeding [18].

In countries with low and middle income, the rates of exclusive breastfeeding are low; in fact, in Eastern European countries, there is an increase in the interest of mixed breastfeeding [19].

Studies evaluate that the impact of breastfeeding on health services is enormous [20]. Children who have been breastfed are less likely to access health services as much as children who have not been breastfed [20,21].

In Romania, from 2004 to 2016, according to the literature, there were considerable fluctuations in the rates of children who were exclusively breastfed in the first 6 months. In 2004, the prevalence of exclusive breastfeeding was 14.4% (urban 13.3%; rural 15.5%) [22]. In 2005 the prevalence of exclusive breastfeeding was 20.8%, but the study included only 545 children under 6 months [23]. In 2011, only 12.6% of Romanian women exclusively breastfed until 6 months [24], but in 2016, there was an increase in breastfeeding exclusivity to a percentage of 29.8% (there are no data on the population included in this study) [25]. These studies do not offer a clear picture of whether Romania has upward, downward, or constant trends in breastfeeding because the percentage differences are large.

Studies conducted at the national level showed the same conclusions: poor nutrition status among both pregnant women and children and increasing prevalence of deficiency anemia and maintaining average birth weight compared to other countries in Europe. According to this report, the exclusive breastfeeding rate was only 12.6%, with an average duration of 2.43 months [24]. Areas where the “Child-friendly Hospital” program was implemented had a higher prevalence of exclusive breastfeeding (16.1%). The Child-Friendly Hospital is an initiative launched by UNICEF to help parents with both information on proper feeding of their children and support in initiating and continuing breastfeeding [24].

In Romania, until 2013, there were 32 maternity hospitals accredited as Child-Friendly Hospitals [26]; currently, we do not have data on how many of them are still accredited or in the process of accreditation.

In 2016, in Romania, the National Institute of Public Health published recommendations for optimal nutrition in the first 1000 days of life [27]. Moreover, on all television and radio stations was approved the message “exclusive breastfeeding of the baby in the first six months is essential for a healthy life” [28].

Despite all the efforts made, Romania still has a high percentage of nitrite poisoning in the age group under 2 years [29] by drinking or using well water, especially in rural areas. This draws an alarm sign on parents’ perception of how to prepare food for children under 2 years and about environmental contaminants that reach children’s diet.

In Romania, there are legislation and programs through which special cases that cannot benefit from human milk can receive free substitutes for human milk. All the costs for substitutes for human milk are borne by the Ministry of Health [30]. This legislation, under which doctors issue medical prescriptions attesting to the need to use human milk substitutes, complies with the International Code of Marketing of Breast Milk Substitutes, developed by WHO and UNICEF, to which Romania adhered in 1982 [30].

First of all, it is necessary to know the current situation in Romania to promote and protect environmental sustainability through breastfeeding. It is necessary to evaluate if, over the years, the directions and policies which have been implemented to promote breastfeeding have led to changes in the behavior of the population.

This study aims to assess the current situation regarding breastfeeding in Romania to achieve future policies to protect breastfeeding and environmental sustainability so that future actions are based on evidence-based medicine.

2. Materials and Methods

This paper followed the PRISMA guidelines [31] (Table S1 PRISMA Checklist, see Supplementary Materials). This paper was not registered on the International Prospective Register for Systematic Reviews.

Design

A literature review was conducted to identify the current situation regarding the breastfeeding situation in Romania. Our study did not involve the participation of human subjects; no personal, sensitive, or confidential data were collected, and we used

publicly accessible databases. For this study, approval from the Ethnic Commission was not necessary.

Sample

A preliminary search was undertaken to ensure that no similar or related systematic review studies had been conducted. Five databases (PubMed, Scopus, Embase, Web of Science, and Cochrane Library) were used to determine articles related to breastfeeding status in Romania.

A PICOS analysis (population, intervention, comparison, outcome, and study design) was undertaken to formulate the following review question: ‘What is the current situation and studies conducted in Romania regarding breastfeeding?’

Population: We reviewed studies involving healthy women or children from Romania.

Intervention: Studies were eligible if they focused on the composition of human milk, factors that may influence breastfeeding, or studies about breastfeeding that included the Romanian population.

Comparison: Studies reporting comparison between different groups regarding the field of interest.

Outcomes: Studies reporting at least one of the following outcomes: feeding practices, exclusivity or duration of breastfeeding, breastfeeding intention, and human milk composition.

Study Design: We selected interventional as well as observational studies (both cross-sectional and longitudinal).

We included all full-text studies conducted in Romania, or that included a population from Romania. Other inclusion criteria were the following: (a) the studies measured breastfeeding intention, exclusivity, or duration, (b) healthy women or children, and (c) studies about the composition of human milk.

We excluded studies about (a) breast pathology, (b) studies that used medication or medical interventions, (c) non-human studies, (d) reviews/systematic reviews, as well as (e) case studies, meta-analyses, book chapters, guidelines, and commentaries.

The number of articles identified and retained is presented in the PRISMA diagram [32] (Figure 1).

The initial search returned a total of 166 articles. Of these, 69 were removed because they were duplicates, 50 articles were removed because they were not relevant to the present study, and 6 of the articles were not conducted in humans and were not excluded in the first instance by search filters. Twelve articles were excluded because they were not in full text.

After excluding studies that did not meet the inclusion and exclusion criteria and reassessing their quality, we obtained 26 articles eligible for the review. Three articles were excluded because they were thematic analyses and conceptual models of breastfeeding policy in Romania, one article was excluded because it referred to women’s perception of birth and breastfeeding, and three articles were excluded because they provided incomplete data.

The electronic databases were searched in May 2023 for studies published in English between 2000 and May 2023, and database searches were repeated in July 2023.

We used the following search terms and Boolean operators: breastfeeding OR lactation AND Romania. The studies were selected according to title and abstract. The references identified have been exported to EndNote.

The first selection of articles consisted of reviewing the abstract to meet the inclusion and exclusion criteria. The selected items have been re-evaluated for quality assessment. Eligible studies were independently evaluated, and data were extracted by two investigators. Different opinions of the authors were solved through discussion.

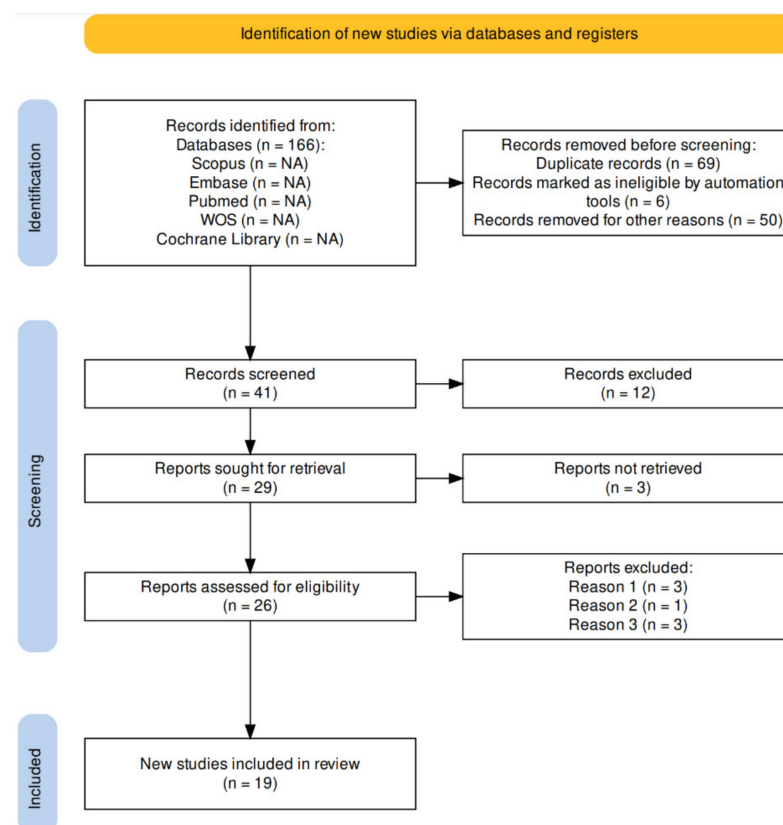


Figure 1. Search flow chart showing numbers of studies screened and finally included in this review. n = number of studies. Reason 1: thematic analysis and conceptual models of breastfeeding policy in Romania; Reason 2: women’s perception about birth and breastfeeding; Reason 3: incomplete data.

Measurement

The variables defined for study comparison were demographic and social characteristics of the sample and outcome measures (feeding practices, exclusivity or duration of breastfeeding, breastfeeding intention, and human milk composition).

For each article, the information collected included authors, the year of publication, the type and aim of the study, research design, variables, and conclusion.

Exclusive breastfeeding was defined as “breastmilk as the only element in infant diet, without any other liquids or solids, except vitamins, minerals, medicines”, according to World Health Organization (WHO) criteria [3].

Breastfeeding intention was defined as “a mother’s intention to provide her baby only breast milk since the infant was born until at the age of 6 months” [33].

Mother education and prenatal or postnatal education were defined according to whether the mother had participated in any course or lessons on childbirth or nutrition of children or received support from medical staff during pregnancy to the immediate postpartum period and childrearing [33].

The following variables were grouped into three categories: characteristics of women included in the study (age, type of birth, and level of education), characteristics of the breastfeeding process (exclusivity, duration, and intentions), and characteristics of breast milk composition (factors influencing composition).

For the purpose of this systematic review, studies were subgrouped into two categories:

1. Studies on attitudes, practices, and behaviors regarding breastfeeding:
 - a. Studies that included Romania in a European context
 - b. Studies that included only the Romanian population and were conducted in Romania.

2. Studies related to the composition of breast milk.

Data extraction for each review was made in Microsoft Excel. Extracted data were described and synthesized in a narrative form.

Data Analysis

We used narrative synthesis to describe the findings from the included studies. Reviewed studies were evaluated for characteristics, country of origin, period of research, design, sample size, primary outcome measure, and results (Table 1).

Themes emerged in two focus areas (the first topic included attitudes, practices, and behaviors regarding breastfeeding, and the second topic included human milk composition). Review studies were grouped according to these specific categories.

Because the country of origin was different, we agreed to separate the articles into:

- a. Studies that included Romania in a European context (Table 2).
- b. Studies that included only the Romanian population and were conducted in Romania (Table 3).

The fourth table lists the studies related to the composition of breast milk (Table 4).

The tables were created and arranged alphabetically by the surname of the first author of each study.

Bias Risk Assessment

Each study was evaluated using supported ROBIS tools [34].

This tool consists of three phases: “relevance assessment which is optional, identification concerns related to the review process and the analysis of the risk of bias” [34].

Table 1. Summary description of studies (N = 19).

First Author and Year	Design	Sample Size	Aim	Conclusion
BalasoIU A.M. 2021 [35]	Interventional	89	Evaluation of the quality of postnatal programs, mental and general health of mothers. Providing information for decision-makers in order to standardize prenatal education based on specific needs of Romanian population.	Women who attended prenatal education courses recognized their benefits. Clear actions are needed to promote prenatal education among women.
BalasoIU A.M. 2022 [36]	Interventional	122	To assess breastfeeding in Neonatal Care in Romania and the effect of prenatal education.	Participation in prenatal classes increases the rate of exclusive breastfeeding. There is a greater interest in prenatal classes of women who are more educated, come from urban areas, and are primiparous.
Becheanu C.A. 2018 [37]	Observational, longitudinal	382	To identify the factors influencing breastfeeding and patterns of complementary feeding and their correlation with socioeconomic circumstances.	The target of the programs of education on nutrition for children under 2 years of age, should be represented by the underprivileged population.
Binia A. 2021 [38]	Observational, longitudinal	370	To identify the role of human milk oligosaccharides HMOs in infant growth and the developing infantile adiposity.	Infant growth and adiposity are not influenced or are only moderately influenced by human milk oligosaccharide (HMO).

Table 1. Cont.

First Author and Year	Design	Sample Size	Aim	Conclusion
Chertok I.A. 2022 [39]	Observational, cross-sectional	26,709	To assess the influence of the pandemic and to identify the factors that are associated with exclusive breastfeeding rates.	During the COVID-19 pandemic, a decrease in exclusive breastfeeding was observed. There is a real need to promote and support breastfeeding, especially post-pandemic.
Cozma-Petruț A. 2019 [40]	Observational, cross-sectional	1399	To identify the factors and the correlation with EIBF practice in north-western Romania.	The present study confirms that EIBF practice is poor. Factors such as prenatal counseling, type of birth, and place of birth can influence EIBF.
Cozma-Petruț A. 2021 [41]	Observational, cross-sectional	1399	To identify the factors regarding BF and EBF practices in north-western Romania.	It can be observed a positive evolution in the rates of all breastfeeding practices due to promotion, protection, and support of breastfeeding.
Giuffrida F. 2022 [42]	Observational, longitudinal	200	To assess the correlation between FA content in HM and in maternal plasma, erythrocytes, and adipose tissue. To analyze the influence of maternal fatty acid (FA) status on milk composition.	The concentration of human milk in FA and its composition are influenced by maternal factors such as parity, maternal BMI, lactation stage, and child factors such as gender or birth gestational age.
Matyas M. 2023 [43]	Observational, longitudinal	89	To assess the impact of the pandemic and maternal infection with SARS-CoV-2 on the newborn in Neonatal Care.	Due to restrictive conditions of the pandemic and the separation of the newborn from its mother had a negative impact on breastfeeding.
Paduraru L. 2018 [44]	Interventional	90	To analyze the differences between premature milk and full-term milk and determine the total antioxidant status (TAS) of human milk.	There are differences between full-term milk and preterm milk in antioxidants.
Paduraru L. 2019 [45]	Interventional	90	To evaluate the effect of refrigeration and freezing and the composition of human milk.	Milk refrigerated for up to 72 h is richer in protein than milk frozen for 2 weeks. In the absence of milk bank access, short-term refrigeration is preferable to long-term freezing.
Popescu D.E. 2022 [46]	Observational longitudinal	91	Analysis of breast milk and the serum values of SARS-CoV-2 spike protein.	Vaccination during pregnancy produces antibodies necessary for the protection of both mother and child through placental transfer from intrauterine life and later through breastfeeding.

Table 1. Cont.

First Author and Year	Design	Sample Size	Aim	Conclusion
Rachita A.I.C. 2023 [47]	Observational, cross-sectional	60	To evaluate the relationship between factors that may improve breastfeeding initiation and correlation with the level of cortisol of young pregnant women.	The increased cortisol level in the last trimester did not influence EIBF, which was influenced by maternal support and education during pregnancy and early skin-to-skin contact.
Rito A.I. 2019 [48]	Observational, cross-sectional	9094	To investigate if BF, EBF, and early-life factors are associated with obesity among children.	There is a correlation between prematurity and the risk of developing subsequent obesity; this was influenced by the type of feeding during the postnatal period.
Samuel T. 2019 [49]	Observational, longitudinal	290	To analyze the composition of breast milk and factors that may influence changes in breast milk. HMOs during the first 4 months of lactation.	Maternal parity, BMI, and birth type can influence the composition of human milk in HMOs.
Simion A. 2021 [50]	Observational, cross-sectional	1768	To assess maternal factors that can influence mothers' attitudes toward breastfeeding and initiation of complementary feeding.	Socioeconomic factors are directly associated with mothers' attitudes toward breastfeeding or complementary feeding.
Trofin F. 2022 [51]	Observational, longitudinal	28	To analyze the immunoglobulin (Ig) A and IgG anti-SARS-CoV-2 titers in human milk after the second dose of the anti-SARS-CoV-2 vaccines.	60 days after vaccination showed the same titers in human milk of Anti-SARS-CoV-2 IgA and IgG of mothers vaccinated with mRNA vaccines.
Trofin F. 2022 [52]	Observational, longitudinal	65	To analyze whether there is a transfer through breast milk of cytokines produced by mothers vaccinated or infected with SARS-CoV-2.	The level of cytokines is influenced by the status of the vaccinated/infected mother, the parity and age of the mother, as well as the age of the children and is not influenced by the type of birth and the presence of IgG in the milk.
Zugravu C. 2018 [53]	Observational, cross-sectional	1008	To evaluate factors influencing breastfeeding duration.	Understanding the mother's behavior pattern and profile is needed to be successful in providing breastfeeding support and medical education.

Note: BMI: body mass index; BF: breastfeeding; EBF: exclusive breastfeeding; EIBF: early initiation of breastfeeding; HM: human milk; HMOs: human milk oligosaccharides; IgA: immunoglobulin A; IgG: immunoglobulin G, TAS: total antioxidant status.

Table 2. Studies that included Romania in the European context.

First Author	Year	Design	Sample Size	No of Countries	Population	Aim	Results
Binia A. [38]	2021	Observational, longitudinal	370	7 European countries	mothers	To assess the relationship between HMOs and infant growth and adipose tissue.	Infant growth and adiposity are not influenced or are only moderately influenced by human milk oligosaccharide (HMO).
Chertok I.A. [39]	2022	Observational, cross-sectional	26,709	17 countries part of IMAGiNE EURO	mothers	To investigate the influence of the pandemic and the identification of factors that are associated with exclusive breastfeeding rates.	During the COVID-19 pandemic, a decrease in exclusive breastfeeding was observed. There is a real need to promote and support breastfeeding, especially post-pandemic.
Giuffrida F [42]	2022	Observational longitudinal	370	7 European countries	mothers	To assess the correlation between FA content in HM and in maternal plasma, erythrocytes, and adipose tissue. To analyze the influence of maternal fatty acid (FA) status on milk composition.	The concentration of human milk in FA and its composition are influenced by maternal factors such as parity, maternal BMI, lactation stage, and child factors such as gender or birth gestational age.
Rito A.I. [48]	2019	Observational, cross-sectional	100,583	22 countries in the WHO European Region	children aged between 6 and 9 years	To investigate if BF, EBF, and other early-life factors are associated with obesity among children.	There is a correlation between prematurity and the risk of developing subsequent obesity, these were influenced by the type of feeding during the postnatal period.
Samuel T. [49]	2019	Observational, longitudinal	370	7 European countries	mothers	To analyze the composition of breast milk and factors that may influence changes in breast milk. HMOs during the first 4 months of lactation.	Maternal parity, BMI, and birth type can influence the composition of human milk in HMOs.

Note: BMI: body mass index; FA: fatty acid; HMOs: human milk oligosaccharides; HM: human milk; WHO: the World Health Organization.

Table 3. Summary description of the studies that are carried out on the Romanian population.

Author and Year	Design	Data Collection	Population	Sample Size	Mother Age (Mean)	Environment		Marital Status		Prenatal Education/Professional Support	
						Urban	Rural	Yes	No	No	Yes
BalasoIU AM 2022 [36]	Interventional	Online questionnaire	Mother	122	-	86.89%	13.1%	-	-	17.21%	82.79%
BalasoIU A.M. 2021 [35]	Interventional	Online questionnaire	Mother	89	-	88.80%	11.20%	-	-	30.30%	69.70%
Becheanu C.A. 2018 [37]	Observational, longitudinal	Structured interview	Children up to 1 year old	382	24.3	67.28%	31.72%	76.70%	23.29%	N/A	-
Cozma-Petruț A 2019 [41]	Observational, cross-sectional	Structured interview	Mother	1399	-	73.40%	26.60%	98.80%	1.20%	50%	49.9%

Table 3. Cont.

Author and Year	Design	Data Collection	Population	Sample Size	Mother Age (Mean)	Environment		Marital Status		Prenatal Education/Professional Support	
						Urban	Rural	Yes	No	No	Yes
Cozma-Petruț A 2021 [40]	Observational, cross-sectional	Structured interview	Mother	1399	-	73.40%	26.60%	98.80%	1.20%	50%	50%
Matyas M. 2023 [43]	Observational, longitudinal	Online questionnaire	Mother	89	28.9	-	-	-	-	N/A	-
Rachita A 2023 [47]	Observational, cross-sectional	dosage of salivary cortisol + LATCH score (structured interview)	Mother	60	28.5	71%	29%	61.60%	39.40%	N/A	-
Simion A 2021 [50]	Observational, cross-sectional	Online questionnaire	Mother	1768	-	68.71%	31.29%	92.31%	7.70%	N/A	-
Zugravu C 2018 [53]	Observational, cross-sectional	Structured interview	Mother	1008	28.6	49%	51%	-	-	42%	58%

Note: LATCH score: a numerical score (0, 1 or 2) is assigned for five components of the breastfeeding session. It is a systematic method of collecting information on the success of breastfeeding [54]. NA: not applicable. -: data not available.

Table 4. Summary description of studies that are conducted on breast milk composition.

Author	Year	Design	Sample Size	Type of Birth		Mother's Age (Mean)	Factors on Which Depends the Composition of Human Milk $p < 0.01$
				Natural	C-Section		
Binia A. [38]	2021	Observational longitudinal	370	75%	25%	31.3	maternal genotype-like secretor time of lactation
Giuffrida F [42]	2022	Observational longitudinal	370	74.10%	25.90%	31.2	mother's nutrition BMI
Paduraru L. [44]	2018	Interventional	90	-	-	-	parity age > 25
Paduraru L. [45]	2019	Interventional	90	-	-	-	mother's age BMI child's sex parity financial status
Popescu D.E. [46]	2022	Observational, longitudinal	91	-	-	-	each trimester of vaccination increases with 13.6 the number of antibodies factors that have no influence: mother's age, gestational age, type of birth, parity
Samuel T [49]	2019	Observational, longitudinal	370	75.20%	24.80%	31.2	BMI parity
Trofin F. [51]	2022	Observational, longitudinal	28	-	-	30.4	infants' age inverses correlated with the parity number not correlated with the vaccine type or mother's age
Trofin F. [52]	2022	Observational, longitudinal	65	26.90%	73.10%	33.2	mother's age, parity, age of the child

Note: BMI: body mass index; -: data not available.

3. Results

We identified a total of 166 studies (see Figure 1). After excluding studies that did not meet the inclusion and exclusion criteria and reassessing their quality, we obtained 26 articles for the review. Of these, only 19 were eligible for inclusion in this systematic review.

Table 1 describes the characteristics of the study. Of the 19 studies, 4 were interventional and 15 were observational (of this 7 were cross-sectional studies, and 8 were longitudinal studies).

The general aspects of the studies conducted in Romania are related to maternal factors, such as socioeconomic status, background, level of education, and individual maternal factors, such as BMI, parity, and mode of delivery, and less discussed are individual factors of the child that could influence breastfeeding outcomes. Studies conducted to determine the composition of breast milk are also focused on maternal socioeconomic factors and individual factors that influence these aspects and less on individual factors of the baby.

Studies comparing breastfeeding support and prenatal attendance at educational courses state that there is a positive correlation between attendance, individual maternal factors, and impacts on breastfeeding [35,36,40,41,47,53].

Although the pandemic had negative influences on breastfeeding, the effect of vaccination protects both mother and child via placental transfer or later through breastfeeding [43,51,52].

Table 2 describes the studies that included Romania in the studies conducted at the European level.

Table 2 describes a general aspect of the aim and conclusion of the European studies that included the Romanian population. Sample sizes ranged from 370 to 100,583 participants (median: 370). Only one study followed children under 6 years of age and correlated mothers' responses to breastfeeding with children's characteristics, while the other studies focused on mothers. These studies analyze the link between maternal factors and the composition of human milk, and the study conducted on children identifies the link between individual factors of the child (gestational age at birth) and feeding method and subsequent development of obesity.

From studies that included the Romanian population and factors associated with breastfeeding (Table 3), two studies were interventional, and seven were observational. Five were cross-sectional and two were longitudinal, with sample sizes ranging from 60 to 1768 participants (median: 382). Four studies used the online questionnaire to collect information from the mothers. A single study has as its target population children under 1 year; the rest of the studies focused on maternal characteristics. These studies evaluated the factors that might influence the outcome of breastfeeding. Data illustrates the associations between breastfeeding and social and environmental factors of mothers; the mean age of the mothers was 28.5. Over 67% of the population included in the studies comes from the urban area. There was a significant percentage (more than 26.9%) of women who gave birth by cesarean section, even if medical factors do not contraindicate natural birth.

Table 4 describes individual and socioeconomic factors on which the composition of human milk depends.

Table 4 illustrates two interventional studies and six observational longitudinal studies, with sample sizes ranging from 28 to 370 participants (median: 77.5). Of these, two studies were about immunological factors and the composition of milk, and six were about factors that might influence the composition of human milk. The correlation between breastfeeding and child development was one of the focus areas for two of the studies included [38,46].

These studies analyzed the factors and the correlation with the composition of human milk. Regarding maternal factors that impact breastfeeding, eight studies state that there is a positive correlation between parity, maternal age, body mass index (BMI), and breastfeeding outcomes ($p < 0.01$). It can also be seen from these studies that cesarean section birth is preferred, with the average age of the mother being 31.9 years.

In these studies, the composition of breast milk is influenced not only by individual maternal factors but also by the age of the baby at the time of birth, as well as by the sex of the baby and the stage of lactation [45,46,51,52].

Table 5 summarizes the factors associated with better breastfeeding outcomes and the impact of prenatal education studies that are carried out on the Romanian population.

Table 5. The factors associated with better breastfeeding outcomes and the impact of prenatal education- studies that are carried out on the Romanian population.

Author and Year	Sample Size	Population	Mother Education	Environment		Support of BF		Variables	TEST Used	Breastfeeding Outcome Conclusion
				Urban	Rural	Yes	No			
Balasoiu A.M. 2021 [35]	89	Mother	University studies (76.4%)	88.8%	11.2%	69.7%	30.3%	Attending the prenatal courses. The impact of prenatal education.	Pearson's correlation and two-sided p values of	Statistically significant correlation between women who attended prenatal classes and found it useful compared to women in the control group. ($n = 55.6\%$), $\chi^2 = 18.412$, $p < 0.001$.
										Statistically significant, it is observed breastfeeding and newborn feeding was considered an important topic for women who attended classes, compared to women from the control group ((55.6%) $\chi^2 = 27.867$, $p < 0.001$).
										It can be noted that women from the study group considered the information about mother alimentation, hygiene, and birth particularly important, compared to women from the control group ((14.8%) $\chi^2 = 22.451$, $p < 0.001$).
Balasoiu AM 2022 [36]	122	Mother	University studies (more than 48%)	86.89%	13.1%	82.79%	17.21%	Participation in pre-and postnatal education courses and breastfeeding.	Chi-square test	Women's origin, level of study, and parity influence breastfeeding outcomes.
								Attending pre/postnatal courses The duration of breastfeeding.	Chi-square test	Participation in classes is moderately associated with increased intention to breastfeed (even if exclusive or mixed).
Becheanu C.A. 2018 [37]	382	Children 1 year	Secondary/ College 41.9%	67.28%	31.72%	-	-	Maternal education and duration of breastfeeding or early weaning and socioeconomic characteristics.	Chi-square tests	Natural childbirth is in direct correlation with initiation and continuation of breastfeeding (67.6%) compared to birth by cesarean section (53.1%, $p = 0.05$).

Table 5. Cont.

Author and Year	Sample Size	Population	Mother Education	Environment		Support of BF		Variables	TEST Used	Breastfeeding Outcome Conclusion
				Urban	Rural	Yes	No			
Cozma-Petruț A 2021 [40]	1399	Mother	A bachelor’s degree or higher (69.8%)	73.4%	26.6%	50%	50%	Independent variable (sociodemographic characteristics, pre/perinatal characteristics) and the indicator.	Descriptive statistics, simple univariate logistic regression analysis	Maternal care at private hospitals leads to better EBF outcomes compared to public hospital care (AOR 1.62, 95% CI 1.06, $p = 0.026$). The proposal to return to work later (after 22 months) is positively associated with intention to EBF, compared to those who opted to return to work in less than 22 months (AOR 7.90, 95% CI 3.43, 18.22; $p = 0.000$).
	1399	Mother	A bachelor’s degree or higher (69.8%)	73.40%	26.60%	49.9%	50%	Factors independently associated with EIBF.	Multivariate logistic regression	Women who received antenatal breastfeeding counseling had higher scores of EIBF (AOR: 1.48, 95% CI 1.12, 1.97; $p < 0.001$).
										Mothers who gave birth at a private hospital were more likely to EIBF (AOR: 5.17, 95% CI 3.87, 6.91; $p < 0.001$).
Cozma-Petruț A 2019 [41]										EIBF is positively correlated with skin-to-skin contact: - for 1 h or more (AOR:55.6, 95% CI 23.0, 134.2; $p < 0.001$), - less than 1 h (AOR: 4.96, 95% CI 3.52, 6.99; $p < 0.001$), - having the swaddled newborn in the arm (AOR: 2.27, 95% CI 1.58, 3.24; $p < 0.001$).
Matyas M. 2023 [43]	89	Mother	-	-	-	-	-	The impact of maternal SARS-CoV-2 infection on neonatal outcome.	Kolmogorov–Smirnov test. the arithmetic mean and the standard deviation (SD) or median	Negative experience during birth hospitalization is associated with a higher risk of not continuing breastfeeding compared to those who did not describe negative experiences ($p = 0.05$, OR = 2.42 (95% CI 1.2–6.31)).

Table 5. Cont.

Author and Year	Sample Size	Population	Mother Education	Environment		Support of BF		Variables	TEST Used	Breastfeeding Outcome Conclusion
				Urban	Rural	Yes	No			
Rachita A.I.C. 2023 [47]	60	Mother	Secondary education (53.33%)	71%	29%	-	-	- The level of salivary cortisol in the third trimester of pregnancy - LATCH score	<i>t</i> -Student test The Mann–Whitney test Multiple linear regression The Fisher test	At 24 h after birth, cesarean is a factor associated with failure to initiate breastfeeding (coefficient is 0.892); - early skin-to-skin reduces this risk OR 0.238 ($p = 0.01$). - At 48 h after birth, smoking is a risk factor associated with the failure of natural nutrition (coefficient is 0.616). LATCH score is directly correlated with parity, and with salivary cortisol level, the coefficient is -0.003 .
Simion A. 2021 [50]	1768	Mother	-	68.71%	31.29%	-	-	Age of the mothers and the number of children influence the age until mothers breastfed.	Fisher's exact test	Mother's age ($p = 0.0012$) and parity ($p < 0.0001$) statistically significantly influences the duration of breastfeeding.
Zugravu C. 2018 [53]	1008	Mother	Average education 52%	49%	51%	58.00%	42.00%	Organization of medical care prenatal education.	Descriptive tests, correlation/partial correlation tests, non-parametric tests, and classification tests. Kolmogorov Smironov test	BF is correlated with prenatal counseling only for the subgroup participating in structured and organized courses ($r = 0.079$; $p = 0.014$); Mother's age, education, residence, type of birth, and rooming-in had a partial correlation with the BF.

Note: CI: confidence interval; AOR: adjusted odds ratio; OR: odds ratio; EIBF: early initiation of breastfeeding; LATCH score: a numerical score (0, 1 or 2) is assigned for five components of the breastfeeding session. It is a systematic method of collecting information on the success of breastfeeding [54]. -: data not available.

Table 5 describes the impact of prenatal or postnatal experience through contact with healthcare professionals or participation in breastfeeding education courses and factors that are statistically significantly associated with improved breastfeeding outcomes. The sample size ranged from 60 to 1768 participants (median: 382).

There is a positive correlation between the level of education and the desire to participate in prenatal courses. Two of the studies note that the period immediately after birth influences the duration of breastfeeding. Thus, negative experiences during hospitalization resulted in a 2.42 times higher risk of lower rates in exclusive breastfeeding ($p = 0.05$, OR = 2.42 (95% CI 1.2–6.31) [43], and maternal care provided in private hospitals is associated with success in the early initiation of breastfeeding (AOR 1.62, 95% CI 1.06, $p = 0.026$) [40,41]); it is statistically significant ($p = 0.01$) improvements in LATCH scores and early initiation of breastfeeding if early skin-to-skin contact is performed [41,47]. Stress levels, as assessed in this study by cortisol levels and parity, negatively influence the LATCH scores [47].

There are correlations between the level of education and interest in breastfeeding information courses, and women who received antenatal breastfeeding counseling had higher scores of early initiation of breastfeeding (AOR: 1.48, 95% CI 1.12, 1.97; $p < 0.001$) [41].

Table 6 describes the maternal characteristics of the study population, the duration and exclusivity of breastfeeding, and the support received.

Most studies (55.56%) showed improvements in breastfeeding outcomes after the mother received support in breastfeeding [37,40,50,53]. Table 6 illustrates the characteristics of the women included in this review. The majority had at least two thirds of the sample from urban areas, while one study had 49% of participants from cities. The majority of women are married, and at least 59.5% of female participants are primiparous. The preferred birth method is by cesarean section; it is also noted the rate of exclusive breastfeeding up until 6 months is increased in this group of women.

Studies that intended to assess the impact of early intervention in maternal education, awareness of the importance of adequate nutrition, and especially the promotion of good food practices concluded that the level of mother education is positively correlated with interest in education and the urban environment is more interested in education courses compared to rural areas [35,36,41,53]. More than 50% of the women included in studies had an average education [35–37,40,41,47,53].

Five of these studies evaluating maternal factors and breastfeeding outcomes concluded that prenatal education is statistically associated with better outcomes in the early initiation of breastfeeding (EIBF) and duration of breastfeeding [35–37,41,53]. In fact, these studies mention a positive correlation between the level of maternal education and the desire to acquire attitudes, knowledge, and good practices regarding breastfeeding. The studies included mainly urban women with a high level of education and interest in prenatal education [35–37,41,53].

The increased cortisol level did not influence early initiation of breastfeeding, but the support and education during pregnancy did [47]. This study mentions that birth by cesarean represents a factor that can influence the initiation and success of natural feeding at 24 h [47]. However, in most studies, a significant percentage of women gave birth by cesarean section (more than 26.9%) and it was not specified if the surgical procedure was performed for medical reasons [35–37,40,41,53].

Table 6. Maternal characteristics of mothers included in the study, respectively, duration and exclusivity of breastfeeding- studies that are carried out on the Romanian population.

Author	Environment		Marital Status		Parity		Type of Birth		Never BF	BF Period		Support of BF	
	Urban	Rural	Married	Unmarried	Primiparous	Multipar	Natural	C-Section		Less than 6 Months	More than 6 Months	Yes	No
Balasoiu A.M. 2021 [35]	88.80%	11.20%	-	-	83.10%	16.90%	20.20%	79.80%	-	-	-	69.70%	30.30%
Balasoiu AM 2022 [36]	86.89%	13.1%	-	-	90.10%	9.90%	26.23%	73.77%	22.22%	-	-	82.79%	17.21%
Becheanu C.A. 2018 [37]	67.28%	31.72%	76.70%	23.29%	-	-	57.6%	24.2%	1%	29.90%	-	-	-
Cozma-Petruț A 2019 [41]	73.40%	26.60%	98.80%	1.20%	59.50%	40.50%	48.5%	51.5%	-	-	-	49.90%	50%
Cozma-Petruț A 2021 [40]	73.40%	26.60%	98.80%	1.20%	59.50%	40.50%	48.50%	51.5%	-	46.70%	54.20%	50%	50%
Matyas M. 2023 [43]	-	-	-	-	-	-	11.35%	78.65%	-	-	-	-	-
Rachita A.I.C. 2023 [47]	71%	29%	61.60%	39.40%	-	-	-	-	-	-	-	-	-
Simion A. 2021 [50]	68.71%	31.29%	92.31%	7.70%	56.16%	43.83%	-	-	-	26.24%	60.63%	-	-
Zugravu C 2018 [53]	49%	51%	-	-	56%	44%	52%	48%	3%	63%	34%	58%	42%

Note: BF: breastfed. -: data not available.

4. Discussion

The studies included in the systematic review were generally well described to provide a good understanding of data. Both longitudinal and cross-sectional studies are included in the present study. Given that the vast majority are community studies, sample sizes are appropriate for the field of research. Although few studies used similar methods of data collection (interview questionnaire and self-administered questionnaire) and similar statistical analyses, studies did give sufficient detail to make a judgment regarding attitudes about breastfeeding. Studies that included education programs and maternal support did not sufficiently detail the type of support, so their comparison was made in terms of socioeconomic factors. All included studies featured a diverse sample of women in terms of age, level of education, parity, type of birth exclusivity, and length of breastfeeding period.

Studies conducted so far include mainly urban populations with a good socioeconomic level and average or high level of education.

The general aspects of the studies included in this systemic review are related to maternal factors such as socioeconomic status, level of education, individual maternal factors, BMI, parity, and mode of delivery. Individual factors of the child that could influence breastfeeding outcomes are less discussed.

Studies conducted to determine the composition of breast milk are also focused on maternal socioeconomic factors and individual factors and less on individual factors of the baby.

The studies about the composition of human milk that were included in this review [44–46,51,52] align with other studies from the literature. It was observed that the composition of breast milk is influenced by the gestational age of the newborn at the time of birth [44] as well as by the gender of the baby [45] and the stage of lactation [44]. Human milk can change depending on the needs of the baby; for example, human milk produced for a newborn in interaction with the infant's saliva will produce peroxide, with an effect on protecting the baby from bacterial colonization, as well as in cases of illness of the baby or mother, whereby breast milk will produce different amounts of immunoglobulins [55,56]. Studies from the literature state that through negative salivary feedback, babies could influence the composition of breast milk [55].

Related conclusions can be found in one systematic review about the effect of gender and the lactation period [57]. The gender of the baby can influence the composition of breast milk, and the human milk adapts to the needs of the baby depending on his age and lactation stage [57].

Although breastfeeding rates at the European level are unsatisfactory at 25% in 2019 [58], the studies included in this report demonstrate a slight trend of increasing interest in breastfeeding in Romania in the last years. Similarly, in other countries like Croatia or France, an improvement in breastfeeding practices and outcomes was observed [59,60].

Family and community support of breastfeeding women has not been analyzed in these studies. In fact, from what we know, there were no studies conducted on the impact on health services, on the environment, or on the negative socioeconomic influence of low breastfeeding rates in Romania.

From the statistical data made available, we know that 30% of the Romanian population is employed with a work card, the average income monthly per family member is 1275 RON (about \$ 300), and a can of human milk substitutes on average costs between 37–90 RON (\$7–18) [61]. The National Authority for Consumer Protection (ANPC) study conducted in 2015 concludes that a family spends between 113.83 RON and 340.65 RON (25–70 \$/month—amounts not adjusted to inflation for the last 8 years) monthly on breast milk substitutes [62].

Due to socioeconomic reasons, it is very possible that the rate of natural breastfeeding at the national level might be different than what the present studies suggest, or even the rates of feeding with milk of animal origin are much increased. The National Institute of Statistics (INS) specifies that in 2018, 43.61% lived in rural areas [61]. Rural areas represent an environment slightly disadvantaged in terms of access to information and promotion of

adequate nutrition, as the authors from the USA have noted a positive correlation between low socioeconomic status and dietary mistakes [63].

Promoting and increasing interest in breastfeeding, especially in rural areas, could increase the well-being of families in this environment, and at the national level, the impact on health services and climate change would decrease.

In Romania, both doula and IBCLC (International Board Certified Lactation Consultants function and contribute as members of the maternal-child health team) [64] are not recognized as occupations in the nomenclature of trades [65].

Studies conducted both at the European level and those analyzed in this report conclude that there are considerable differences between women who have benefited from prenatal/postnatal education and breastfeeding outcomes [14,15].

The literature notes that the decision to breastfeed is influenced by previous breastfeeding experience and education [15], while the decision to continue breastfeeding is influenced by the contribution of healthcare professionals [16].

In line with the insight from other reviews [66], breastfeeding support and promotion should be undertaken both prenatally and postnatally and should be related to maternal attitudes, knowledge, and behaviors and adapted to socioeconomic and individual needs [66]. A Cochrane meta-analysis remarked that early but long-term constant interventions are more effective than short-term interventions. Also, the same meta-analysis observed that the support and involvement of professional care providers was more effective than other usual methods of education [67]. Surprisingly, one of the studies included in this review observed a negative correlation between gynecologist visits and prenatal education [53]; similar conclusions were found in a recent study published in 2022 [66].

However, the author of the Cochrane meta-analysis noted that a randomized controlled study with an adequate sample size in low-middle-income countries is necessary to have conclusive evidence on the support of prenatal education [67].

The deficiency of programs at the national level on the protection, promotion, and support of breastfeeding is reflected in the pathology associated with improper nutrition. For the period 2012–2021, in Romania, 495 cases of nitrite poisoning were reported, with 97% of children being from rural areas and the predominant age group being 1–3 months [29]. This not only shows the lack of knowledge of proper nutrition for children under 2 years old and international recommendations on the benefits and exclusivity of breastfeeding but also shows the lack of knowledge on the preparation of human milk substitutes. This could suggest that the population does not understand the importance of natural breastfeeding and that the methods of preparing human milk substitutes in order not to expose children to preventable pathology (diarrhea, nitrite poisoning, etc.).

We know from specialized studies that it is necessary, with 9.09 kg of raw milk required for each 1 kg of powdered milk produced, which produces greenhouse gas (GHG). Based on studies' estimations, this will lead to GHG emissions of 3.95–4.04 CO₂-eq per kg of milk powder [68]. Revenue in the milk substitutes market is expected to grow annually by 11.65% in Romania up to 2028 [69]. According to studies, Europe maintains itself as the largest producer of infant formula in the market [70].

The percentage of mixed breastfeeding is higher in developing countries [19] and worldwide in both low- and high-income countries; there is an increasing trend of feeding with breast milk substitutes [4]. None of the studies included in this review specifies the percentage of consumption of breast milk substitutes in Romania.

Among the studies excluded from this review, two of them exposed mothers' ambivalence regarding breastfeeding and social and personal perspectives so that in the future, they would be able to formulate policies and interventions focused on cultural beliefs [71,72]. Another excluded study is a conceptual model that aims to integrate interventions (needs) and breastfeeding barriers into a logical model, proposing a public health solution to develop personalized recommendations to increase breastfeeding duration in Romania [73].

In 2018, for the occasion of World Breastfeeding Week, future political strategies to promote breastfeeding were formulated and included in the National Health Strategy and National Strategy for Sustainable Development [74]:

1. To increase to 50% exclusively breastfed infants in the first 6 months of life by 2025 [74].
2. Improving health and nutrition to reduce the risk of death of mother and child [74].
3. Increasing the level of information, awareness, and responsibility of the population regarding nutrition and health of newborns and young children by increasing accessibility to basic information [74].
4. Reducing spending on health (reducing hospitalization and treatment expenses), household (breastfeeding is accessible anywhere and anytime, it is free), and environmental (breast milk is organic and does not pollute) [74].
5. Achieve the Sustainable Development Goals by 2030 by linking each of these goals to breastfeeding. It is proposed that by 2030, they would have eradicated hunger and ensured access to safe, nutritious, and sufficient food for all. And by eradicating hunger, they would eradicate all forms of malnutrition [74].

Eating behaviors and attitudes toward healthy foods are influenced by the mother. Maternal eating behavior and breastfeeding may influence children's subsequent food choices [11]. Studies in the field affirm that eating habits are formed by parents. Family knowledge, eating practices, and attitudes toward eating will have a long-term positive effect on the future eating habits of the children [75]. Thus, we can extrapolate by stating that the attitudes, knowledge, and eating behavior of families in Romania during the first two years of life will influence future attitudes regarding food.

Romanian national studies conclude that poor nutrition status among both pregnant women and children, increasing prevalence of deficiency anemia and maintaining average birth weight compared to other countries in Europe [24].

This review attempts to outline maternal attitudes toward breastfeeding factors that influence breastfeeding outcomes and aligns with studies in the field to understand the intent and motivation to give newborns a good start through breastfeeding [66].

The mother's knowledge about breastfeeding was the primary factor influencing breastfeeding outcomes [17]. As mothers tend to wean early in the first 6 months, it is necessary to intervene on these factors, primarily on knowledge and on support of breastfeeding in the first 6 months [18].

In order to formulate real concepts regarding the sustainability of natural nutrition with human milk, we need to understand the attitudes and intentions of mothers regarding how to feed children under 2 years old. The growing interest in mixed breastfeeding in low- and middle-income countries suggests a lack of information for families about the benefits of exclusively breastfeeding [19].

Specialized studies note that the incidence of exclusive breastfeeding and breastfeeding duration increases with longer maternity leave [9]. In Romania, maternity leave is 22 months (and 2 months are reserved for fathers to support equal parenting), and yet the exclusive breastfeeding rate is low.

In this review a study that assesses breastfeeding intention and length of maternity leave is included [40]. This study identifies the proposal to return to work later (after 22 months) is positively associated with the intention to early breastfeeding, compared to those who opted to return to work in less than 22 months. The same aspect is mentioned in the literature; in a study from 2016, they examined exclusive breastfeeding and noted that how long a mother will breastfeed is influenced by the mother's intention to return to work [76].

The studies included in this review do not analyze the economic impact of maternity leave; it does not specify whether or not the population included in the study benefits from maternity leave. Moreover, specialized studies note that paid leave has been associated with higher rates of immunization [77]. Given that Romania is a country that allows paid maternity leave for a fairly long period and supports equal parenting, it would be interesting in the future to investigate whether there is a link between maternity leave and

the length of breastfeeding, optimal nutrition of the child, neurocognitive development of the child in the first two years, and socioeconomic impact.

Another literature review concludes that maternity leave can support sustainable development objectives impacting maternal and child health [77].

The rural area is considered a disadvantaged environment in terms of access to information about high-quality medical systems and education programs, respectively [63].

In the present study, the women who are living in rural areas showed less interest in participating in education courses. The same idea is formulated in other specialized studies. Low levels of education and low socioeconomic status negatively influence breastfeeding and dietary practices [78–80]. In fact, the increased level of education and socioeconomic status influence ecological behavior [81]; therefore, increasing access to education and information on breastfeeding could lead to increased awareness of the benefits of breastfeeding and its sustainability, being a start for achieving the objectives of sustainable development projects.

Some of the factors influencing the composition of breast milk are known; in the present study, as described above, both maternal factors and some of the individual factors of the child are correlated with the composition of human milk [45,46,51,52]. Aspects such as the influence of the environment on the composition of human milk and the contamination of human milk by environmental pollution are aspects not treated in these studies. The literature states that exclusive breastfeeding is sustainable, being the source of food with almost zero ecological impact [7,10].

Soil, water, and air pollution have led to contamination, including in breast milk, which has been considered since 1950 a biomarker of exposure to environmental pollutants [82]. These aspects could influence a child's growth and cognitive development. Therefore, the vicious circle of contamination of human milk through daily pollution could be broken if, through projects that promote and support breastfeeding, people would know the benefits of human milk and its relationship to sustainability.

Since 2016, we have noticed in Romania a significant implication of nongovernmental, governmental, and other organizations at the national level to promote breastfeeding.

In the current context and with the desire of the community of Romania to reduce the carbon footprint, protect the environment, and influence climate change, increasing breastfeeding outcomes (exclusivity and duration of breastfeeding) could have major implications both at the national and European levels.

Promotion, early maternal support, and coordinated and structured strategies on the mother-child dyad and at the individual maternal level would lead to a decrease in infant deaths, improve human capital, and support long-lasting, sustainable food [7].

Future Research Directions:

Inclusion studies of the rural population by developing, implementing, and evaluating educational activities for families of children under 2 years of age are required. The involvement of different decision-makers (family doctors, local authorities, and the community) in motivating the rural population is necessary. It is also necessary to train staff with special training in pre- and postnatal education and especially in breastfeeding education so that mothers can integrate attitudes toward breastfeeding, knowledge, and practices to increase the duration and exclusivity of breastfeeding.

Limitations

There are several limitations to this systematic review. First, one of the limitations is the small number of studies included. Second, the included studies have a risk of bias due to selection; few studies used similar methods of data collection and similar statistical analyses. In fact, the articles included a population mainly from urban zones, which is another limitation of the study. Although a rigorous study selection process was followed, it may happen that some articles would have escaped unintentionally, which may be considered another limitation of the study.

5. Conclusions

To sum up, in the studies that included Romania in the European context, we observed that Romania has similar characteristics to the population in Europe in the fields of interest. Studies included in the review concluded that mothers' age, body mass index, and parity might influence human milk composition. Only one study [46] considers mothers' age, parity, delivery mode, and children's factors as gestational age as having no influence on the number of antibodies in human milk after vaccination with SARS-CoV-2 vaccines. From studies performed in Romania we can see that there are positive correlations between the environment of origin, mothers' age, and interest in participating in breastfeeding education programs. There are positive correlations between the level of education and awareness of the importance of pre- and postnatal courses, while marital status and parity are in direct correlation with breastfeeding outcomes.

In other words, although the Romanian population aligns with the characteristics of the European population in terms of composition of human milk and factors that might influence breastfeeding outcomes, with a lower duration and exclusivity of breastfeeding compared to the European trend, studies included in this systematic review demonstrate the existence of a subgroup population (women from rural areas) with different socioeconomic characters having a disadvantaged background regarding access to information, in which early and long-term interventions could influence breastfeeding outcomes.

The present study illustrates aspects of factors influencing maternal attitude, behavior, and knowledge of breastfeeding. These general aspects form the overall picture of women from Romania and attitudes regarding breastfeeding in Romania.

To be able to offer sustainable policies to reduce the carbon footprint, protect the environment, and influence climate change, it is necessary to know the current status of breastfeeding in Romania. Statement of future possible policies in order to determine increasing the exclusivity and sustainability of breastfeeding should be based on evidence-based medicine.

Key messages:

We need to adapt the interventions to culture, knowledge, and sociodemographic attitudes.

There is a slight tendency to increase the rate of breastfeeding in Romania.

Globally, the rates of breastfeeding remain lower than what WHO and UNICEF set as a target.

Almost 47% of the Romanian population are from rural areas, an area to which we must turn our attention to promoting adequate nutrition for children under 2 years old.

Promoting and increasing interest in breastfeeding, especially in rural areas, could increase the well-being of families in this environment, and at the national level, the impact on health services and climate change would be significant.

Supplementary Materials: The following supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/su16020636/s1>, Table S1: PRISMA Checklist.

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References

- Li, R.; Ware, J.; Chen, A.; Nelson, J.M.; Kmet, J.M.; Parks, S.E.; Morrow, A.L.; Chen, J.; Perrine, C.G. Breastfeeding and post-perinatal infant deaths in the United States, A national prospective cohort analysis. *Lancet Reg. Health Am.* **2022**, *5*, 100094. [CrossRef]
- Lee, J.W.; Lee, M.; Lee, J.; Kim, Y.J.; Ha, E.; Kim, H.S. The Protective Effect of Exclusive Breastfeeding on Overweight/Obesity in Children with High Birth Weight. *J. Korean Med. Sci.* **2019**, *34*, e85. [CrossRef] [PubMed]
- World Health Organization. Global Breastfeeding Scorecard 2022: Protecting Breastfeeding through Further Investments and Policy Actions. Available online: <https://www.who.int/publications-detail-redirect/WHO-HEP-NFS-22.6> (accessed on 15 July 2023).
- Baker, P.; Santos, T.; Neves, P.A.; Machado, P.; Smith, J.; Piwoz, E.; Barros, A.J.D.; Victora, C.G.; McCoy, D. First-food systems transformations and the ultra-processing of infant and young child diets: The determinants, dynamics and consequences of the global rise in commercial milk formula consumption. *Matern. Child Nutr.* **2021**, *17*, e13097. [CrossRef] [PubMed]
- Pope, D.H.; Karlsson, J.O.; Baker, P.; McCoy, D. Examining the Environmental Impacts of the Dairy and Baby Food Industries: Are First-Food Systems a Crucial Missing Part of the Healthy and Sustainable Food Systems Agenda Now Underway? *Int. J. Environ. Res. Public Health* **2021**, *18*, 12678. [CrossRef] [PubMed]
- Andresen, E.C.; Hjelkrem, A.R.; Bakken, A.K.; Andersen, L.F. Environmental Impact of Feeding with Infant Formula in Comparison with Breastfeeding. *Int. J. Environ. Res. Public Health* **2022**, *19*, 6397. [CrossRef]
- Rollins, N.C.; Bhandari, N.; Hajeerhoy, N.; Horton, S.; Lutter, C.K.; Martines, J.C.; Piwoz, E.G.; Richter, L.M.; Victora, C.G. Why invest, and what it will take to improve breastfeeding practices? *Lancet* **2016**, *387*, 491–504. [CrossRef] [PubMed]
- Centers for Disease Control and Prevention. Diet Considerations for Breastfeeding Mothers. Available online: <https://www.cdc.gov/breastfeeding/breastfeeding-special-circumstances/diet-and-micronutrients/maternal-diet.html> (accessed on 29 September 2023).
- Smith, J.P.; Lande, B.; Johansson, L.; Baker, P.; Bærug, A. The contribution of breastfeeding to a healthy, secure and sustainable food system for infants and young children: Monitoring mothers' milk production in the food surveillance system of Norway. *Public Health Nutr.* **2022**, *25*, 2693–2701. [CrossRef]
- Davidove, M.E.; Dorsey, J.W. Breastfeeding: A Cornerstone of Healthy Sustainable Diets. *Sustainability* **2019**, *11*, 4958. [CrossRef]
- Yelverton, C.A.; Geraghty, A.A.; O'Brien, E.C.; Killeen, S.L.; Horan, M.K.; Donnelly, J.M.; Larkin, E.; Mehegan, J.; McAuliffe, F.M. Breastfeeding and maternal eating behaviours are associated with child eating behaviours: Findings from the ROLO Kids Study. *Eur. J. Clin. Nutr.* **2021**, *75*, 670–679. [CrossRef]
- UNICEF. Support Breastfeeding for a Healthier Planet. Available online: <https://www.unicef.org/press-releases/support-breastfeeding-healthier-planet> (accessed on 29 September 2023).
- Unicef UK Baby Friendly Initiative. Case Study: Breastfeeding and Climate Change—Baby Friendly Initiative. Available online: <https://www.unicef.org.uk/babyfriendly/breastfeeding-and-climate-change/> (accessed on 29 September 2023).
- Rohini, A.M.; Elavally, S.; Saradakutty, G. Effectiveness of breastfeeding education compared to standard hospital information on exclusive breastfeeding among mothers: A systematic review. *J. Educ. Health Promot.* **2022**, *11*, 125. [CrossRef]
- Ballesta-Castillejos, A.; Gómez-Salgado, J.; Rodríguez-Almagro, J.; Ortiz-Esquinas, I.; Hernández-Martínez, A. Factors that influence mothers' prenatal decision to breastfeed in Spain. *Int. Breastfeed. J.* **2020**, *15*, 97. [CrossRef] [PubMed]
- Norman, A.; Mortimer, S.; Baptie, G.; Percuklievskaja, N.; Ferrario, H. Breastfeeding experiences and support: Identifying factors influencing breastfeeding behaviour. *Br. J. Midwifery* **2022**, *30*, 190–201.
- Kehinde, J.; O'Donnell, C.; Grealish, A. The effectiveness of prenatal breastfeeding education on breastfeeding uptake postpartum: A systematic review. *Midwifery* **2023**, *118*, 103579. [CrossRef] [PubMed]
- Martins, F.A.; Ramalho, A.A.; Andrade, A.M.; Opitz, S.P.; Koifman, R.J.; Silva, I.F.D. Breastfeeding patterns and factors associated with early weaning in the Western Amazon. *Rev. De Saude Publ.* **2021**, *55*, 21. [CrossRef] [PubMed]
- Neves, P.A.R.; Barros, A.J.D.; Gatica-Domínguez, G.; Vaz, J.S.; Baker, P.; Lutter, C.K. Maternal education and equity in breastfeeding: Trends and patterns in 81 low- and middle-income countries between 2000 and 2019. *Int. J. Equity Health* **2021**, *20*, 20. [CrossRef]
- Quesada, J.A.; Méndez, I.; Martín-Gil, R. The economic benefits of increasing breastfeeding rates in Spain. *Int. Breastfeed. J.* **2020**, *15*, 34. [CrossRef]
- Lechosa-Muñoz, C.; Paz-Zulueta, M.; Herrero, M.S.A.; Rio, E.C.D.; Sota, S.M.; Llorca, J.; Cabero-Perez, M.J. Health Care Costs Associated to Type of Feeding in the First Year of Life. *Int. J. Environ. Res. Public Health* **2020**, *17*, 4719. [CrossRef]
- Romanian Ministry of Health; World Bank; UNFPA; USAID; UNICEF. Reproductive Health Survey: Romania. 2004. Available online: https://www.insmc.ro/wp-content/uploads/2021/01/studiul_sanatati_reproducerii.pdf (accessed on 22 July 2023).

23. Institute for Mother and Child Protection “Alfred Rusescu” (Bucharest); Romanian Ministry of Health; UNICEF. Nutritional Status of Children up to 5 Years Old: Romania 2005. Available online: https://www.insmc.ro/wp-content/uploads/2021/01/status_nutritional_copii5ani.pdf (accessed on 22 July 2023).
24. Nanu, M.I.; Moldovanu, F.; Novak, C.; Stativă, E.; Stoicescu, S. Evaluating the Effectiveness of Interventions Included in National Nutrition Programs for Children under 2 Years of Age—Final Report. 2011. Available online: <https://www.insmc.ro/wp-content/uploads/2021/01/Nutritie-sub-2-ani-raport-final-studiu.pdf> (accessed on 22 July 2023).
25. SAMAS Association—SAMAS 2016 Study on Breastfeeding and Nutrition of Young Children. Breastfeeding and Nutrition of Children in the First Year of Life—Increasingly Better Understood by Mothers. Available online: <https://www.programsamas.ro/studiul-samas-privind-alaptarea-si-diversificarea-copilului-mic-2016/> (accessed on 31 July 2023).
26. UNICEF; Babeş-Bolyai University Cluj-Napoca, Romania College of Political, Administrative and Communication Sciences; Department of Public Health. Action lines to promote breastfeeding in Romania. UNICEF Romania. Available online: <https://www.unicef.org/romania/documents/action-lines-promote-breastfeeding-romania> (accessed on 22 July 2023).
27. Bucurenci, M.; Bunesco, D.; Bătăiosu, M.; Dumitrescu, M.; Isar, C.; Neculau, A.; Popa, I.; Mărginean, M.; Ciobanu, M.; Gălan, A.; et al. Prevention Guide. Volume 6. Problems of Nutrition, Growth and Development in Children: Nutrition between 0–2 Years, Growth and Development Disorders. National Center for Family Medicine Studies. 2016. Available online: https://cnsmf.ro/ghidpreventie/GhidPreventie_Vol6.pdf (accessed on 27 July 2023).
28. SAMAS Association—Health for Mothers and Infants. About the Activity of the Association. Available online: <https://www.programsamas.ro/despre-noi/> (accessed on 31 July 2023).
29. Staicu, C.A.; Voinoiu, A.; Constantin, M.; Nuta, D.; Chirila, I. National Register of Health Risks in Relation to Environmental Factors RESANMED Report 2021. Available online: <https://insp.gov.ro/download/cnmrmc/documente/resanmed/RaportResanmed2021.pdf> (accessed on 2 August 2023).
30. Free Provision of Powdered Milk for Children Aged 0–12 Months. Law No. 321 of June 26, 2001, Published in Monitorul Oficial “Official Gazette” No. 341 of June 27. 2001. Available online: <https://legislatie.just.ro/Public/DetaliiDocumentAfis/29202>, (accessed on 31 July 2023).
31. Page, M.J.; McKenzie, J.E.; Bossuyt, P.M.; Boutron, I.; Hoffmann, T.C.; Mulrow, C.D.; Shamseer, L.; Tetzlaff, J.M.; Akl, E.A.; Brennan, S.E.; et al. The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ (Clin. Res. Ed.)* **2021**, *372*, n71. [CrossRef]
32. Haddaway, N.R.; Page, M.J.; Pritchard, C.C.; McGuinness, L.A. PRISMA 2020: An R package and Shiny app for producing PRISMA 2020-compliant flow diagrams, with interactivity for optimised digital transparency and Open Synthesis. *Campbell Syst. Rev.* **2022**, *18*, e1230. [CrossRef]
33. World Health Organization. Indicators for Assessing Infant and Young Child Feeding Practices: Definitions and Measurement Methods. 2021. Available online: <https://apps.who.int/iris/handle/10665/340706> (accessed on 31 July 2023).
34. Whiting, P.; Savović, J.; Higgins, J.P.; Caldwell, D.M.; Reeves, B.C.; Shea, B.; Davies, P.; Kleijnen, J.; Churchill, R.; ROBIS Group. ROBIS: A new tool to assess risk of bias in systematic reviews was developed. *J. Clin. Epidemiol.* **2016**, *69*, 225–234. [CrossRef]
35. Balasoiu, A.M.; Olaru, O.G.; Sima, R.M.; Ples, L. How Did Prenatal Education Impact Women’s Perception of Pregnancy and Postnatal Life in a Romanian Population. *Medicina* **2021**, *57*, 581. [CrossRef]
36. Balasoiu, A.M.; Dinu, M.D.; Gorecki, G.P.; Sima, R.M.; Ples, L. The Impact of Prenatal Lectures in Breastfeeding and Neonatal Care in Romania—Our Experience. *Maedica* **2022**, *17*, 291–296. [CrossRef]
37. Becheanu, C.A.; Tincu, I.F.; Smadeanu, R.E.; Leşsanu, G. Feeding Practices Among Romanian Children in the First Year of Life. *HK J. Paediatr. (New Ser.)* **2018**, *23*, 13–19.
38. Binia, A.; Lavalle, L.; Chen, C.; Austin, S.; Agosti, M.; Al-Jashi, I.; Pereira, A.B.; Costeira, M.J.; Silva, M.G.; Marchini, G.; et al. Human milk oligosaccharides, infant growth, and adiposity over the first 4 months of lactation. *Pediatr. Res.* **2021**, *90*, 684–693. [CrossRef]
39. Chertok, I.A.; Artzi-Medvedik, R.; Arendt, M.; Sacks, E.; Otelea, M.R.; Rodrigues, C.; Costa, R.; Linden, K.; Zaigham, M.; Elden, H.; et al. Factors associated with exclusive breastfeeding at discharge during the COVID-19 pandemic in 17 WHO European Region countries. *Int. Breastfeed. J.* **2022**, *17*, 83. [CrossRef]
40. Cozma-Petruţ, A.; Filip, L.; Banc, R.; Mîrza, O.; Gavrilăş, L.; Ciobărcă, D.; Badiu-Tişa, I.; Hegheş, S.C.; Popa, C.O.; Miere, D. Breastfeeding Practices and Determinant Factors of Exclusive Breastfeeding among Mothers of Children Aged 0–23 Months in Northwestern Romania. *Nutrients* **2021**, *13*, 3998. [CrossRef] [PubMed]
41. Cozma-Petruţ, A.; Badiu-Tişa, I.; Stanciu, O.; Filip, L.; Banc, R.; Gavrilăş, L.; Ciobărcă, D.; Hegheş, S.C.; Miere, D. Determinants of Early Initiation of Breastfeeding among Mothers of Children Aged Less than 24 Months in Northwestern Romania. *Nutrients* **2019**, *11*, 2988. [CrossRef]
42. Giuffrida, F.; Fleith, M.; Goyer, A.; Samuel, T.M.; Elmelegy-Masserey, I.; Fontannaz, P.; Cruz-Hernandez, C.; Thakkar, S.K.; Monnard, C.; De Castro, C.A.; et al. Human milk fatty acid composition and its association with maternal blood and adipose tissue fatty acid content in a cohort of women from Europe. *Eur. J. Nutr.* **2022**, *61*, 2167–2182. [CrossRef] [PubMed]
43. Matyas, M.; Valeanu, M.; Hasmasanu, M.; Voina, B.; Tutu, A.; Zaharie, G.C. The Effect of Maternal SARS-CoV-2 Infection on Neonatal Outcome. *Children* **2023**, *10*, 771. [CrossRef]
44. Păduraru, L.; Dimitriu, D.C.; Avasiloiu, A.L.; Moscalu, M.; Zonda, G.I.; Stamatina, M. Total antioxidant status in fresh and stored human milk from mothers of term and preterm neonates. *Pediatr. Neonatol.* **2018**, *59*, 600–605. [CrossRef]

45. Păduraru, L.; Zonda, G.I.; Avasilaoiei, A.L.; Moscalu, M.; Dimitriu, D.C.; Stamatin, M. Influence of refrigeration or freezing on human milk macronutrients and energy content in early lactation: Results from a tertiary centre survey. *Paediatr. Child Health* **2019**, *24*, 250–257. [\[CrossRef\]](#) [\[PubMed\]](#)
46. Popescu, D.E.; Cîtu, C.; Jura, A.M.C.; Lungu, N.; Navolan, D.; Craina, M.; Semenescu, A.; Gorun, F.; Jura, M.A.; Belengeanu, V.; et al. The Benefits of Vaccination against SARS-CoV-2 during Pregnancy in Favor of the Mother/Newborn Dyad. *Vaccines* **2022**, *10*, 848. [\[CrossRef\]](#) [\[PubMed\]](#)
47. Răchită, A.I.C.; Strete, G.E.; Sălcudean, A.; Ghiga, D.V.; Huțanu, A.; Muntean, L.M.; Suci, L.M.; Mărginean, C. The Relationship between Psychological Suffering, Value of Maternal Cortisol during Third Trimester of Pregnancy and Breastfeeding Initiation. *Medicina* **2023**, *59*, 339. [\[CrossRef\]](#)
48. Rito, A.I.; Buoncristiano, M.; Spinelli, A.; Salanave, B.; Kunešová, M.; Hejgaard, T.; García Solano, M.; Fijałkowska, A.; Sturua, L.; Hyska, J.; et al. Association between Characteristics at Birth, Breastfeeding and Obesity in 22 Countries: The WHO European Childhood Obesity Surveillance Initiative—COSI 2015/2017. *Obes. Facts* **2019**, *12*, 226–243. [\[CrossRef\]](#) [\[PubMed\]](#)
49. Samuel, T.M.; Binia, A.; de Castro, C.A.; Thakkar, S.K.; Billeaud, C.; Agosti, M.; Al-Jashi, I.; Costeira, M.J.; Marchini, G.; Martínez-Costa, C.; et al. Impact of maternal characteristics on human milk oligosaccharide composition over the first 4 months of lactation in a cohort of healthy European mothers. *Sci. Rep.* **2019**, *9*, 11767. [\[CrossRef\]](#)
50. Simion, A.; Simion, M.; Moldovan, G. Breastfeeding and diversification attitudes among Romanian mothers. *Acta Marisiensis—Ser. Med.* **2021**, *67*, 167–169. [\[CrossRef\]](#)
51. Trofin, F.; Nastase, E.V.; Iancu, L.S.; Constantinescu, D.; Cianga, C.M.; Lunca, C.; Ursu, R.G.; Cianga, P.; Dorneanu, O.S. Anti-RBD IgA and IgG Response and Transmission in Breast Milk of Anti-SARS-CoV-2 Vaccinated Mothers. *Pathogens* **2022**, *11*, 286. [\[CrossRef\]](#)
52. Trofin, F.; Dorneanu, O.S.; Constantinescu, D.; Nastase, E.V.; Luncă, C.; Iancu, L.S.; Andrioaie, I.M.; Duhaniuc, A.; Cianga, C.M.; Pavel-Tanasa, M.; et al. Cytokines and Chemokines in Breastmilk of SARS-CoV-2 Infected or COVID-19 Vaccinated Mothers. *Vaccines* **2022**, *10*, 2001. [\[CrossRef\]](#)
53. Corina, Z.; Michaela, N.; Florentina, M.; Oana, A.; Cristina, M.; Marina, O.; Simona, C. The Influence of Perinatal Education on Breastfeeding Decision and Duration. *Int. J. Child Health Nutr.* **2018**, *7*, 74–81. [\[CrossRef\]](#)
54. Jensen, D.; Wallace, S.; Kelsay, P. LATCH: A breastfeeding charting system and documentation tool. *J. Obstet. Gynecol. Neonatal Nurs. JOGNN* **1994**, *23*, 27–32. [\[CrossRef\]](#)
55. Al-Shehri, S.S.; Knox, C.L.; Liley, H.G.; Cowley, D.M.; Wright, J.R.; Henman, M.G.; Hewavitharana, A.K.; Charles, B.G.; Shaw, P.N.; Sweeney, E.L.; et al. Breastmilk-Saliva Interactions Boost Innate Immunity by Regulating the Oral Microbiome in Early Infancy. *PLoS ONE* **2015**, *10*, e0135047. [\[CrossRef\]](#) [\[PubMed\]](#)
56. Breakey, A.A.; Hinde, K.; Valeggia, C.R.; Sinofsky, A.; Ellison, P.T. Illness in breastfeeding infants relates to concentration of lactoferrin and secretory Immunoglobulin A in mother's milk. *Evol. Med. Public Health* **2015**, *2015*, 21–31. [\[CrossRef\]](#) [\[PubMed\]](#)
57. Khelouf, N.; Haoud, K.; Meziani, S.; Fizir, M.; Ghomari, F.N.; Khaled, M.B.; Kadi, N. Effect of infant's gender and lactation period on biochemical and energy breast milk composition of lactating mothers from Algeria. *J. Food Compos. Anal.* **2023**, *115*, 104889. [\[CrossRef\]](#)
58. Theurich, M.A.; Davanzo, R.; Busck-Rasmussen, M.; Díaz-Gómez, N.M.; Brennan, C.; Kylberg, E.; Bærug, A.; McHugh, L.; Weikert, C.; Abraham, K.; et al. Breastfeeding Rates and Programs in Europe: A Survey of 11 National Breastfeeding Committees and Representatives. *J. Pediatr. Gastroenterol. Nutr.* **2019**, *68*, 400–407. [\[CrossRef\]](#) [\[PubMed\]](#)
59. Grgurić, J.; Zakarija-Grković, I.; Pavičić Bošnjak, A.; Stanojević, M.A. A multifaceted approach to revitalizing the Baby-Friendly Hospital initiative in Croatia. *J. Hum. Lact.* **2016**, *32*, 568–573. [\[CrossRef\]](#) [\[PubMed\]](#)
60. Courtois, F.; Péneau, S.; Salanave, B.; Andreeva, V.A.; Roland-Cachera, M.F.; Touvier, M.; Galan, P.; Hercberg, S.; Fezeu, L.K. Trends in breastfeeding practices and mothers' experience in the French NutriNet-Santé cohort. *Int. Breastfeed. J.* **2021**, *16*, 50. [\[CrossRef\]](#)
61. National Institute of Statistics. Romania in Numbers. 2019. Available online: https://insse.ro/cms/sites/default/files/field/publicatii/romania_in_cifre_2019_2.pdf (accessed on 1 August 2023).
62. Pro Consumer Association. Market Study on Infant Infant Formula. 2015. Available online: <https://www.apc-romania.ro/ro/i-studiu-de-piata-despre-laptele-praf-de-inceput-pentru-sugari/Mjg1LTA.html> (accessed on 1 August 2023).
63. Aschbrenner, K.; Cornish, D.L. Barriers to Barriers to Breastfeeding among Rural Women in the United States. *Univ. J. Res. Scholarsh. Creat. Act.* **2017**, *12*, 12.
64. International Board of Lactation Consultant Examiners. About IBLCE—What Is IBCLC. 2023. Available online: <https://ibclce.org/about-ibclce/#What-Is-An-IBCLC> (accessed on 31 July 2023).
65. Sindla.com. Cod COR “Code Codes of Occupations in ROMANIA”. Available online: <https://codcor.ro/> (accessed on 31 July 2023).
66. Bengough, T.; Dawson, S.; Cheng, H.-L.; McFadden, A.; Gavine, A.; Rees, R.; Sacks, E.; Hannes, K. Factors that influence women's engagement with breastfeeding support: A qualitative evidence synthesis. *Matern. Child Nutr.* **2022**, *18*, e13405. [\[CrossRef\]](#)
67. Lumbiganon, P.; Martis, R.; Laopaiboon, M.; Fesrin, J.H.O.J.; Hakimi, M. Antenatal Breastfeeding Education for Increasing Breastfeeding Duration. *Cochrane Database Syst. Rev.* **2011**, *9*, CD006425. [\[CrossRef\]](#)
68. Dadhich, J.; Smith, J.P.; Iellamo, A.; Suleiman, A. Climate Change and Infant Nutrition: Estimates of Greenhouse Gas Emissions from Milk Formula Sold in Selected Asia Pacific Countries. *J. Hum. Lact.* **2021**, *37*, 314–322. [\[CrossRef\]](#)

69. Statista. Milk Substitutes Romania, Statista Market Forecast. Available online: <https://www.statista.com/outlook/cmo/food/dairy-products-eggs/milk-substitutes/romania#revenue> (accessed on 31 July 2023).
70. Yi Chen of Gira. Global Infant Formula Products Market: Estimations and Forecasts for Production and Consumption, China Dairy. 2018. Available online: https://www.girafood.com/wp-content/uploads/2018/09/GIRA_ChinaDairy_GlobalInfantFormulaProductsMarketEN_June2018.pdf (accessed on 1 August 2023).
71. Wallis, A.B.; Brînzaniuc, A.; Oprescu, F.; Cherecheș, R.M.; Mureșan, M.; Dungy, C.I. A structured public health approach to increasing rates and duration of breastfeeding in Romania. *Breastfeed. Med. Off. J. Acad. Breastfeed. Med.* **2011**, *6*, 429–432. [CrossRef]
72. Tăut, D. Breastfeeding (Un)Covered: Narratives of Public Breastfeeding on Romanian Discussion Forums. *Int. J. Behav. Med.* **2017**, *24*, 815–826. [CrossRef] [PubMed]
73. Cristescu Delia, S.; Petrut Paula, A.; Taut, D. The social construction of breastfeeding in public: An incursion into the discussion forums. In Proceedings of the Second World Congress on Resilience: From Person to Society, Timisoara, Romania, 8–10 May 2014; Medimond: Bologna, Italy, 2014; pp. 179–184. Available online: https://www.researchgate.net/profile/Maria-Turliuc/publication/272802685_Construction_and_validation_of_the_resilience_scale_for_infertile_couples_RASIC/links/5a5e45fb458515c03ee0add8/Construction-and-validation-of-the-resilience-scale-for-infertile-couples-RASIC.pdf#page=201 (accessed on 1 August 2023).
74. National Institute of Public Health. Analysis of the Situation Occasioned by the Campaign for the Celebration of World Breastfeeding Week August 1–7. 2018. Available online: <https://insp.gov.ro/download/analiza-de-situatie-alimentatie-la-san-2018-pdf/> (accessed on 1 August 2023).
75. Soraya, S.; Hastuti, D.; Johan, I.R. The Influence of Parents Feeding Practices, Eating Knowledge, and Attitude on Eating Behavior among Senior High School Students in South Tangerang, Indonesia. *Open Access Maced. J. Med. Sci.* **2021**, *9*, 913–918. [CrossRef]
76. Thomas-Jackson, S.C.; Bentley, G.E.; Keyton, K.; Reifman, A.; Boylan, M.; Hart, S.L. In-hospital Breastfeeding and Intention to Return to Work Influence Mothers' Breastfeeding Intentions. *J. Hum. Lact. Off. J. Int. Lact. Consult. Assoc.* **2016**, *32*, NP76–NP83. [CrossRef] [PubMed]
77. Heymann, J.; Sprague, A.R.; Nandi, A.; Earle, A.; Batra, P.; Schickedanz, A.; Chung, P.J.; Raub, A. Paid parental leave and family wellbeing in the sustainable development era. *Public Health Rev.* **2017**, *38*, 21. [CrossRef]
78. Heck, K.E.; Braveman, P.; Cubbin, C.; Chávez, G.F.; Kiely, J.L. Socioeconomic status and breastfeeding initiation among California mothers. *Public Health Rep.* **2006**, *121*, 51–59. [CrossRef]
79. Newhook, J.; Newhook, L.A.; Midodzi, W.K.; Murphy Goodridge, J.; Burrage, L.; Gill, N.; Halfyard, B.; Twells, L. Poverty and Breastfeeding: Comparing Determinants of Early Breastfeeding Cessation Incidence in Socioeconomically Marginalized and Privileged Populations in the FiNaL Study. *Health Equity* **2017**, *1*, 96–102. [CrossRef] [PubMed]
80. Almeida, C.; Azevedo, J.; Gregório, M.J.; Barros, R.; Severo, M.; Padrão, P. Parental practices, preferences, skills and attitudes on food consumption of pre-school children: Results from Nutriscience Project. *PLoS ONE* **2021**, *16*, e0251620. [CrossRef]
81. Piao, X.; Managi, S. The international role of education in sustainable lifestyles and economic development. *Sci. Rep.* **2023**, *13*, 8733. [CrossRef]
82. Bernasconi, S.; Street, M.E.; Iughetti, L.; Predieri, B. Chemical contaminants in breast milk: A brief critical overview. *Glob. Pediatr.* **2022**, *2*, 100017. [CrossRef]

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