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# Risk factors for early weaning in the neonatal period: an integrative literature review

Factores de riesgo de destete temprano en el periodo neonatal: revisión integrativa de la literatura

Fatores de risco para o desmame precoce no período neonatal: uma revisão integrativa da literatura

## ABSTRACT

Background: breast milk is the ideal food for children in the neonatal period, as it has all the necessary nutrients for their growth and healthy development. Despite these benefits, the prevalence of exclusive breastfeeding is below the recommendations of the Ministry of Health. Objective: to analyze the risk factors for early weaning in the neonatal period highlighted in national and international literature. Method: it was an integrative literature review indexed from the PUBMED, CINAHL, LILACS/BDENF/IBECs databases by VHL, WEB of SCIENCE and SCOPUS. The sample were 12 full papers published between 2001 and 2019. Results: psychological, anatomical and pathological risk factors were identified; introduction of artificial recipe/food supplementation; regarding to the breastfeeding technique; use of common tools such as pacifiers and bottles; return to employment and/or school activities. Conclusion: the analysis of the full papers showed the complexity of breastfeeding and the multifactorial nature of early weaning.

**DESCRIPTORS:** Breast Feeding; Risk Factors; Weaning; Infant, Newborn.

## RESUMEN

Introducción: la leche materna es el alimento ideal para los niños en el período neonatal, ya que posee todos los nutrientes necesarios para su crecimiento y desarrollo saludable. A pesar de estos beneficios, la prevalencia de la lactancia materna exclusiva está por debajo de las recomendaciones del Ministerio de Salud. Objetivo: analizar los factores de riesgo para el destete precoz en el período neonatal destacados en la literatura nacional e internacional. Método: se trató de una revisión de integradora de literatura indexada en las bases de datos PUBMED, CINAHL, LILACS/BDENF/IBECs vía BVS, WEB of SCIENCE y SCOPUS. La muestra estuvo compuesta por 12 artículos publicados entre 2001 y 2019. Resultados: se identificaron factores de riesgo psicológicos, anatómicos y patológicos; introducción de fórmulas artificiales / complementos alimenticios; relacionado con la técnica de lactancia materna; uso de herramientas culturales como chupetes y biberones; regreso al trabajo y / o actividades escolares. Conclusión: el análisis de los artículos mostró la complejidad de la lactancia materna y la naturaleza multifactorial del destete precoz.

**DESCRIPTORES:** Lactancia Materna; Factores de Riesgo; Destete; Recién Nacido.

## RESUMO

Introdução: o leite materno é o alimento ideal para criança no período neonatal, por possuir todos os nutrientes necessários para seu crescimento e desenvolvimento saudável. Apesar desses benefícios, as prevalências de Aleitamento Materno Exclusivo estão abaixo das recomendações do Ministério da Saúde. Objetivo: analisar os fatores de risco para o desmame precoce no período neonatal destacados na literatura nacional e internacional. Método: tratou-se de uma revisão integrativa de literatura indexada nas bases de dados PUBMED, CINAHL, LILACS/BDENF/IBECs via BVS, WEB of SCIENCE e SCOPUS. A amostra constituiu-se de 12 artigos publicados entre 2001 e 2019. Resultados: identificou-se fatores de risco psicológicos, anatômofisiológicos ou patológicos; introdução de fórmula artificial/suplementação alimentar; relacionados à técnica de amamentação; uso de utensílios culturais como chupetas e mamadeiras; retorno às atividades laborais e/ou escolares. Conclusão: a análise dos artigos evidenciou a complexidade da prática do aleitamento materno e o caráter multifatorial do desmame precoce.

**DESCRIPTORES:** Aleitamento Materno; Fatores de risco; Desmame; Recém-nascido.

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## **INTRODUCTION**

**B**reast milk is the main source of protection and nutrition for the health of the newborn (NB), as it has all the necessary components for healthy growth and development, in addition to favoring the bond of the mother-child dyad. <sup>(1)</sup> Despite these benefits, the prevalence of exclusive breastfeeding (EBF) and total breastfeeding of children are below the recommendations of the Ministry of Health and the World Health Organization (WHO). <sup>(2)</sup> For this reason, there is an urgent need to develop strategies to encourage EBF, consequently avoiding early weaning. <sup>(3)</sup>

Worldwide, the highest rates of breastfeeding (BF) are located in Sub-Saharan Africa, South Asia and parts of Latin America. In high-income countries, the prevalence is less than 20,0%. In low and middle income countries, 36,3 million (63,0%) of children under six months do not receive EBF. <sup>(4)</sup> In Brazil, a median duration of EBF

of 54,1 days (1,8 months) is identified in the set of Brazilian capitals and the Federal District. <sup>(5)</sup>

The Ministry of Health recommends that BF be started early, even in the first hour of life of the newborn (called the first golden hour) and maintained exclusively in the first six months, when it will be supplemented until the age of two or more. <sup>(6)</sup> However, data identified in surveys for EBF time show that the results are well below what is recommended. <sup>(2)</sup> Although in the last three decades, the prevalence of breastfeeding indicators in Brazil has shown an upward trend, it is worrying the slowdown identified in the most recent National Health Survey, carried out in 2013, which indicated a decrease in EBF among children aged three to five months of life. <sup>(7)</sup>

The interruption of EBF occurs due to several factors, usually associated with culture, lifestyle, low education of women, insufficient guidance from health professionals during prenatal and puerperium and, in some cases, due to health problems in the newborn. In ad-

dition, the ineffective technique of breastfeeding, which makes breast sucking and emptying difficult and can lead to losses in the dynamics of milk synthesis and breast problems, is also associated with early weaning. <sup>(1)</sup>

In view of the multiple factors involved in the occurrence of early weaning, the need to intensify the strategies already implemented and develop innovative actions to promote, protect and support breastfeeding is reinforced, covering the various sectors of society, in order to foster the growth of prevalence and duration of EBF. Furthermore, in-depth analyzes of this phenomenon can also help to improve the indicators. <sup>(7)</sup>

In light of this, this research is relevant for showing the actors that can lead to early weaning in the neonatal period. Knowledge about risk factors capable of compromising breastfeeding will contribute to guide interventions and provide reflections on the quality of care in the management of the pregnancy-puerperal cycle from the perspective of promoting and maintaining EB. The

study aims to analyze the risk factors for early weaning in the neonatal period highlighted in national and international literature. Thus, the following research guiding question was established: what are the risk factors for early weaning in the neonatal period?

## METHOD

It is an Integrative Literature Review (ILR), in scientific articles available in national and international journals, stored in the electronic databases National Library of Medicine (PubMed); Index to Nursing and Allied Health Literature (CINAHL); Latin American and Caribbean Literature in Health Sciences (LILACS), Bibliographic Index Español en Ciencias de la Salud (IBECS) and Nursing Database (BDENF), via Virtual Health Library (VHL); International Health Sciences Literature (MEDILINE); WEB of SCIENCE and SCOPUS, in Portu-

guese, English and Spanish. The script proposed in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) methodology was used. The data were collected in the month of July 2019 by two independent researchers, without the establishment of temporal filters, as a comprehensive analysis of the literature on the subject is intended.

For the elaboration of the study, the PICo strategy was adopted, in which P corresponds to the Problem, I to the phenomenon of Interest and Co to the context of the study.<sup>(8)</sup> Subsequently, controlled and uncontrolled descriptors were established, selected from consultation with Descriptors in Health Sciences (DeCS), Medical Subject Headings (MeSH) and List of Headings of CINAHL Information Systems (Chart 1).

Inclusion criteria were established: primary studies related to early weaning in the neonatal period, with no time

frame for the selection of articles. We excluded: narrative literature review / traditional, systematic or integrative review; notes, editorials, reports, dissertations and theses; studies that analyzed early weaning in the neonatal period associated with other periods (such as children under one year old) in which it is not possible to specifically delimit the neonatal period; and studies that do not answer the research question.

The selection of studies was performed, initially, by reading the titles and abstracts. Then, the selected articles were read in full, the extracted data were grouped in an adapted data collection form.<sup>(9)</sup> The data obtained by analyzing the objectives, results and conclusion of each study were grouped by similarity. Data analysis consisted of coding, thorough and impartial categorization as well as the interpretation and synthesis of data, with the aim of increasing its accuracy in order to understand the phenomenon studied.<sup>(10)</sup>

Quadro 1. Estratificação da pergunta de pesquisa seguindo a estratégia PICo. Florianópolis, PI, Brasil, 2020

| PICo | COMPONENTES      | DESCRITORES                           | DESCRIPTOR NÃO CONTROLADO  | TIPOS                          |
|------|------------------|---------------------------------------|--|--------------------------------|
| P    | Desmame precoce  | Desmame<br>Weaning                    | "Desmame precoce"<br>"Breastfeeding Weaning"<br>"Lactation Management"   | DeCS<br>MeSH<br>Títulos CINAHL |
| I    | Fatores de risco | "Fatores de risco"<br>"Risk Factors"  | "Fator de Risco"<br>"Fatores de Risco Biológicos"<br>"Fatores de Risco Não Biológicos"<br>"Fatores de Riscos Biológicos"<br>"Fatores de Riscos Não Biológicos"<br>"Factor, Risk"<br>"Factors, Risk"<br>"Risk Factor"                     | DeCS<br>MeSH<br>Títulos CINAHL |
| Co   | Período neonatal | "Recém-nascido"<br>"Infants, Newborn" | "Criança Recém-Nascida"<br>"Crianças Recém Nascidas"<br>"Lactente Recém-Nascido"<br>"Lactentes Recém-Nascidos"<br>"Neonato"<br>"Neonatos"<br>"Newborn Infant"<br>"Newborn Infants"<br>"Newborns"<br>"Newborn"<br>"Neonate"<br>"Neonates" | DeCS<br>MeSH<br>Títulos CINAHL |

## RESULTS

1,673 articles potentially relevant for the review were identified (MEDLINE via PUBMED n = 336; LILACS / BDE-

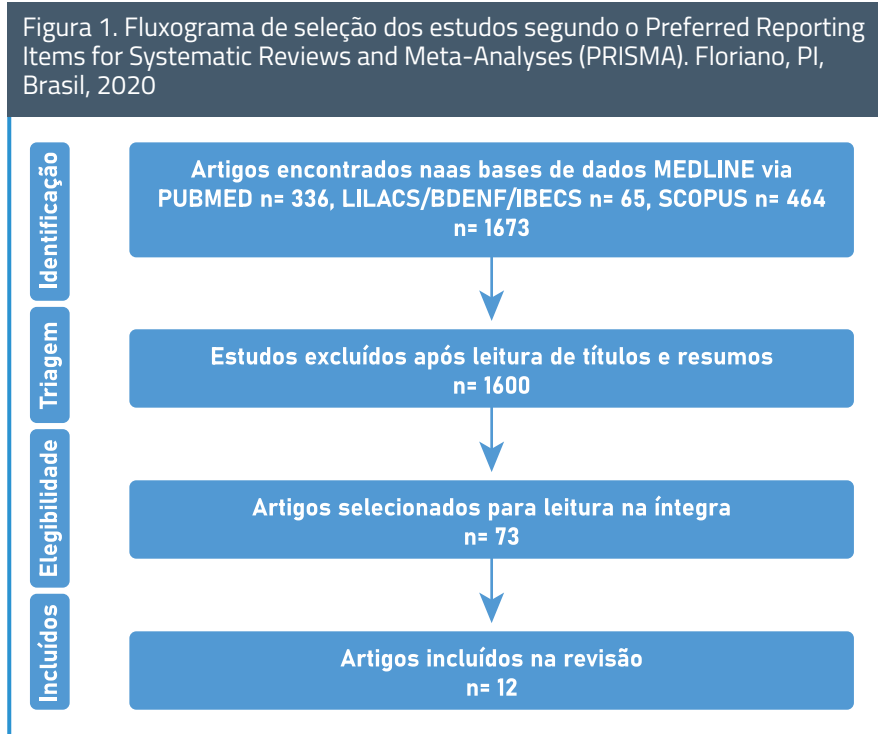
NF / IBECs via VHL n = 65; CINAHL n = 746; WEB of SCIENCE n = 62; SCOPUS n = 464) of which 73 articles were selected for full reading, remaining a total of 12 articles that met the inclu-

sion criteria and were selected to compose the sample, as shown in Figure 1, which followed the PRISMA recommendations.

The studies were published between 2001 and 2019, of which 03 were published in 2015, 02 in 2001, 02 in 2003, and only 01 in the other years: 2002, 2008, 2012, 2014 and 2019. Considering the location of the studies, most were developed in Brazil (04 articles), followed by the United States of America (02) and Spain (02), Canada (01), Sweden (01), Rome (01) and Austria (01). The following is an overview of the articles analyzed in Chart 2.

## DISCUSSION

Risk factors include any behavior, lifestyle, environmental exposure or congenital condition that, according to epidemiological evidence, is related to a condition that increases the probability of the occurrence of a given unfavorable phenomenon. Early weaning is understood as the interruption of EBF before the sixth month of life, which should be avoided, as recommended by the Ministry of Health. <sup>(23)</sup>



Quadro 2. Descrição dos artigos incluídos na RIL, segundo autor, objetivo e fatores de risco para o desmame precoce. Floriano, PI, Brasil, 2020s incluídos segundo autor, título, objetivo e resultado. Fortaleza, CE, Brasil, 2019

| AUTOR / CÓDIGO                      | OBJETIVO  | FATORES DE RISCO PARA O DESMAME PRECOCE  |
|-------------------------------------|---|--|
| Marques et al. <sup>(11)</sup> / A1 | Descrever as práticas de amamentação entre cri-anças de 0 a 12 meses de idade em 4 pequenas cidades representativas do Nordeste urbano do Brasil.   | Pré-estabelecimento da forma que pretende amamentar (não ex-clusiva); acreditar que o bebê necessita de água, chã, suco e ou-tros alimentos; levar chupeta e mamadeira para maternidade; ini-ciar outros leites, principalmen-te em mamadeiras; receber alta da maternidade sem ter iniciado a amamen-tação; considerar o ato de amamentar desagradável; choro do RN; volta ao trabalho; acreditar que o bebê está sempre com fome.  |
| Sheehan et al. <sup>(12)</sup> / A2 | Examinar os padrões de amamentação entre os cinco estudos locais; Identificar os fatores de risco para interrupção precoce da amamenta-ção (ou seja, <4 semanas após o parto) em Ontário. | Alimentação com fórmula; inadequada oferta de leite; dificuldade nas técnicas de amamentação; mamilos doloridos; falta de sistema universal de apoio à amamentação; permanecer no hospital mais tempo do que 48 horas após o nascimento do bebê; retorno ao trabalho ou escola; características maternas (idade, paridade, ou-tros filhos, estado civil, renda, fonte de renda, educação, status de emprego e prontidão para alta); necessidades de aprendizado não atendidas no hospital; influência recebida favorável ao uso de fórmula infantil; não concluir o ensino médio; não esperar confiar no grupo ou centro de atendimento às mães; necessitar de uma ou mais visitas maternas a um médico de família; necessitar de cui-dados ou ajuda com a amamentação, mas incapaz de obtê-la; não esperar contar com grupos de mães ou centros de acolhimento. |

|  |  |   |
|--|--|---|
| Schwartz et al. <sup>(13)</sup> / A3     | Determinar os fatores demográficos, comportamentais e clínicos associados à interrupção da amamentação nas primeiras 12 semanas pós-parto.   | Mastite; uso de bombas; dor nas mamas; uso de mamadeira; amamentar seis ou menos vezes por dia; amamentar por menos de 10 minutos por mamada; considerar o leite insuficiente; uso de mamadeiras; idade materna; menor escolaridade; realizar suplementação alimentar com a fórmula infantil.   |
| Soares et al. <sup>(14)</sup> / A4       | Verificar a prática do uso de chupetas e sua relação com o desmame precoce em crianças nascidas em um Hospital Amigo da Criança.   | Uso de chupeta; ser primogênito.  |
| Taveras et al. <sup>(15)</sup> / A5      | Avaliar as associações entre a interrupção da amamentação na 2ª e 12ª semana pós-parto e apoio clínico, estado de saúde física e mental materna, problemas no local de trabalho e outros fatores passíveis de intervenção. | Percepção de oferta insuficiente de leite; dor na mama; problemas com seus recém-nascidos; problemas no local de trabalho ou escola; ser primípara; apresentar sintomas depressivos; falta de apoio do pai da criança; problemas com a sucção ou pega do recém-nascido.   |
| Venancio et al. <sup>(16)</sup> / A6     | Identificar fatores associados à introdução de líquidos, exceto leite materno, no primeiro dia em casa após alta do hospital.  | Introdução de água, chá e outros leites; parto cesáreo.   |
| Gerd et al. <sup>(17)</sup> / A7         | Avaliar os fatores associados à descontinuação da amamentação durante as primeiras 4 semanas.  | Introdução de misturas e fórmula infantil; dificuldade para iniciar o aleitamento materno; problemas no processo de amamentação; tabagismo materno e paterno; baixo peso ao nascimento; técnica de sucção do bebê inadequada; percepção de baixo ganho de peso; problema nos mamilos; pega e sucção inadequada; baixa frequência de mamadas; prematuridade.   |
| Rius et al. <sup>(18)</sup> / A8         | Analisar possíveis fatores associados ao abandono do AM.   | Introdução de fórmula artificial; perda de apoio à amamentação após a alta da maternidade; sensação de produção de leite insuficiente; fumar durante a gravidez; ter alimentado a criança anterior com leite artificial; baixa expectativa materna em amamentar; estresse emocional, pessoal e econômico dessas situações.  |
| Lindau et al. <sup>(19)</sup> / A9       | Investigar os fatores de risco para a amamentação exclusiva.   | Uso de chupetas; cesárea planejada; sofrimento psíquico como: episódios de depressão, insônia, angústia e percepção do nascimento como evento traumático; não frequentar aulas pré-natais; apresentar estresse físico e mental.   |
| Amaral et al. <sup>(20)</sup> / A10      | Identificar os fatores que podem influenciar as nutrizas na interrupção do aleitamento materno exclusivo durante os primeiros seis meses de vida do lactente.  | Crença de produção de leite insuficiente ou de leite fraco nos primeiros dias do puerpério; insegurança materna; dificuldade de pega; intercorrências mamárias relacionadas a pega ou posicionamento inadequados da criança ao mamar; dor durante o aleitamento; realizar aleitamento materno predominante; apresentar intercorrências com o neonato; uso de bicos artificiais ou mamadeira; mitos e crenças relacionados com o ato de amamentar que influenciam diretamente na introdução precoce de outros líquidos, como os chás e a água; falta de apoio dos familiares e dos profissionais de saúde. |
| Karall et al. <sup>(21)</sup> / A11      | Entender melhor os fatores que influenciam o desmame em nossa região.  | Alimentação suplementar; baixa idade materna; baixo nível educacional; insuficiência de leite percebida; baixa autoeficácia na amamentação.   |
| Vila-Candel et al. <sup>(22)</sup> / A12 | Determinar a prevalência de aleitamento materno exclusivo aos 3 meses pós-parto; Conhecer as causas que contribuem para o abandono precoce.  | Motivos relacionados à glândula mamária (mamilo umbilicado; mastite; fissuras no mamilo; hipogalactia); Motivos relacionados ao recém-nascido (doença neonatal, icterícia, internação, baixo peso e prematuridade); perda de assistência ao aleitamento materno; desejo da puérpera em utilizar fórmula artificial; ganho de peso do recém-nascido menor que o recomendado; fatores trabalhistas.   |

A significant statistical association was identified between the introduction of artificial formula / food supplementation and early weaning, as seen in A1, A2, A3, A6, A7, A8, and A11. This risk

factor, when carried out in the neonatal period, has negative impacts for the maintenance of BF, standing out among the others identified, due to the fact that these foods have a high caloric weight

and are difficult to digest. As a consequence, the NB is more satiated by the difficulty of its gastrointestinal system, still immature, in metabolizing these foreign particles.<sup>(24)</sup>

In addition, in general, these foods are made available in bottles, which causes discouragement in sucking the breast and impairs the neuromotor stimulation of the newborn's skull-face complex. It also contributes to food abuse, as mothers often expect their newborns to consume all available content. These factors, therefore, favor the reduction of the newborn's need to be breastfed, contributing to the emergence of some breastfeeding problems, such as decreased milk production and the occurrence of nipple cracks.<sup>(25, 26)</sup>

Anatomical, physiological or pathological changes also stood out as intervening, such as: pain, mastitis, umbilicated nipple, nipple cracks and hypogalactia, as evidenced in A2, A3, A5, A7, A10, and A12. These breast problems are among the main causes that lead to early weaning and tend to appear in the first weeks of the puerperium. They trigger discomfort and difficulty in breastfeeding, because when the nursing mother feels pain, stress or fear, her body does not release oxytocin, a fundamental hormone for ejection of milk.<sup>(1,3)</sup>

Risk factors related to the breastfeeding technique in A2, A3, A5, A7 and A10 were also evidenced, namely: inadequate grip, short-term and determined feedings and frequent breast change. These inappropriate practices make it impossible to consume the posterior milk, which provides greater satiety to the NB and, therefore, potentiate breast problems, since they can lead to breast trauma, in addition to contributing to make the breastfeeding technique ineffective due to the presence of pain and discomfort associated with breastfeeding.<sup>(27)</sup>

Another problem common to lactation is the perception / sensation of insufficient or weak milk production, leading the mother to believe that the NB constantly cries due to hunger, as seen in A1, A3, A5, A6, A10, A11 and A12. Difficulties in breastfeeding favor the reduction of milk production which, through the negative feedback mechanism, due to the inadequate emptying of the breasts, makes milk production less and less, un-

til it stops completely.<sup>(28)</sup> It is essential to clarify even during prenatal care that it is part of the natural behavior of newborns to breastfeed frequently, which is misinterpreted as a sign of hunger for the child, weak or insufficient milk, predisposing to supplementation with formulas and, consequently, to weaning.<sup>(25)</sup>



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Intercurrences with the neonate, including prematurity, which is directly related to low birth weight, neonatal disease, jaundice and hospitalization, are also among the main findings that negatively influence EBF, and were reported in A1, A2, A5, A7, and A10. In particular, due to physiological, neurological

immaturity, muscular hypotonia and hyporeactivity to environmental stimuli<sup>(1)</sup>, prematurity presents a risk associated with early weaning, significantly related to the weak, weak or absent sucking reflex.<sup>(29)</sup> Despite the intervening difficulties, strategies that allow the supply of breast milk to premature newborns must be implemented, including administration via an orogastric tube by gavage, through gastroclysis, as well as using the cup.<sup>(30)</sup>

The use of cultural tools such as pacifiers and baby bottles, identified in A1, A3 A4, A9 and A10, is also shown to be associated with weaning, as infants who use them tend to leave the breast early, due to facilitating the confusion of nipples.<sup>(2)</sup> Furthermore, the use of the bottle favors the appearance of neuromuscular, occlusive, swallowing, chewing changes, and increases the probability of the development of dental caries, in addition to being associated with a higher risk of infectious diseases.<sup>(26)</sup>

The resumption of daily activities, especially the return to work and / or school activities, as reported in A1, A2, A5 and A12, also presented itself as a relevant risk factor for early weaning. The reinsertion in these activities triggers maternal overload, due to the need to reconcile multiple roles<sup>(3)</sup> and imposes a busier daily routine that ends up predisposing to the use of artificial nipples, such as pacifiers and bottles, by allowing the ingestion of food more quickly and by the freedom to carry out other activities, since someone else can offer it to the newborn. Thus, the use of these devices, as previously mentioned, contributes to early weaning.<sup>(26)</sup>

Psychological problems, such as stress, distress, insomnia, perception of the child's birth as a traumatic event and depression, evidenced in A2, A5, A8 and A9, are also frequent in the first weeks of the puerperium and are relevant risk factors for early weaning. There is an inverse relationship between these conditions, especially postpartum depression, and breastfeeding, due to a lower probabili-

ty of having a positive experience, which can lead to early weaning.<sup>(31)</sup> The early identification of maternal mental health problems during the perinatal period is essential to promote the emotional well-being of mothers and prevent difficulties in breastfeeding.<sup>(32)</sup>

## CONCLUSION

The analysis of the articles showed the complexity of the practice of BF and the multifactorial character of early weaning. It was verified the presence of different factors in the same context of occurrence of early weaning, whether involving anatomophysiological or cul-

tural, psychological, economic, social aspects that, mutually, are able to potentiate the risks and hinder the implementation and maintenance of BF in the period neonatal and, as a consequence, in later stages.

The significant number of risk factors associated with early interruption of BF in the first hours and days of life of the newborn allows us to indicate the importance of analysis and early identification of possible actors that can be tracked even during pregnancy, through prenatal consultation, or in Joint Housing, with a view to preventing or managing them. It also reinforces the importance of investing in strategies

that reduce risk factors, considering the different contexts in which mothers and newborns are inserted. Thus, an expanded, individualized and multi-professional approach is needed. ■

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