Recommendations for the practice of breastfeeding in the COVID-19 pandemic: integrative review

Recomendações para a prática do aleitamento materno na pandemia de COVID-19: uma revisão integrativa

Recomendaciones para la práctica de la lactancia materna en la pandemia de COVID-19: revisión integradora

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Alanna Elcher Elias Pereira
ORCID: https://orcid.org/0000-0001-9516-1883
University of International Integration of Afro-Brazilian Lusophony, Brazil
E-mail: alannaeep@gmail.com

Carolina Maria de Lima Carvalho
ORCID: https://orcid.org/0000-0002-5173-5360
University of International Integration of Afro-Brazilian Lusophony, Brazil
E-mail: carolinacarvalho@unilab.edu.br

Anne Fayma Lopes Chaves
ORCID: https://orcid.org/0000-0002-7331-1673
University of International Integration of Afro-Brazilian Lusophony, Brazil
E-mail: annefayma@yahoo.com.br

Ana Carolina Maria Araújo Chagas Costa Lima
ORCID: http://orcid.org/0000-0002-1469-1805
Federal University of Ceará, Brazil
E-mail: anacarolina@ufc.br

Karoline Galvão Pereira Paiva
ORCID: https://orcid.org/0000-0001-5406-9853
University of International Integration of Afro-Brazilian Lusophony, Brazil
E-mail: karolinglegalvao@gmail.com

Joelita de Alencar Fonseca Santos
ORCID: https://orcid.org/0000-0003-0126-465X
University of International Integration of Afro-Brazilian Lusophony, Brazil
E-mail: joelitalenencar@hotmail.com

Williane Morais de Jesus Gazos
ORCID: https://orcid.org/0000-0001-8713-7111
University of International Integration of Afro-Brazilian Lusophony, Brazil
E-mail: willianemoraidesjesus@gmail.com

Dara Cesario Oliveira
ORCID: https://orcid.org/0000-0002-1708-1260
University of International Integration of Afro-Brazilian Lusophony, Brazil
E-mail: daracesario2011@gmail.com

Anne Caroline Ferreira Queiroga
ORCID: https://orcid.org/0000-0002-7958-2247
University of International Integration of Afro-Brazilian Lusophony, Brazil
E-mail: anneeqli@gmail.com

Amanda Peixoto Lima Nemer
ORCID: https://orcid.org/0000-0003-4584-8550
University of International Integration of Afro-Brazilian Lusophony, Brazil
E-mail: amanda.p23@hotmail.com

Jocilene da Silva Paiva
ORCID: https://orcid.org/0000-0002-8340-8954
University of International Integration of Afro-Brazilian Lusophony, Brazil
E-mail: enferjocilene@gmail.com

Maria Eduarda Rocha Lima
ORCID: https://orcid.org/0000-0003-2481-8117
Estacio do Ceará University Center, Brazil
E-mail: duda_limai59@hotmail.com

Ana Caroline Morais Paiva
ORCID: https://orcid.org/0000-0002-6949-8842
Faculty of Education and Culture of Ceará, Brazil
E-mail: anapaiva477@gmail.com
Abstract
Objective: to analyze the general recommendations for the practice of breastfeeding in the face of infection by the new coronavirus. Method: integrative literature review, carried out in the LILACS and Pubmed databases, from March to May 2020. The searches took place with the following combinations of descriptors “Coronavirus”, “Lactation” and “Breastfeeding”. The limitation regarding the year of publication of the articles during the searches carried out was from 2019 to 2020. Results: the search in the data sources allowed the inclusion of ten articles, two from Brazilian journals, found in the LILACS database, and eight of international origin, selected in the PubMed database. Conclusion: From this review, it became evident that most studies addressed the recommendation to maintain the practice of breastfeeding in women with COVID-19. These studies reinforce the importance of counseling, the necessary care during the act of breastfeeding, in addition to recognizing the benefits of breastfeeding. The large number of research on the subject defends and favors breastfeeding for women suspected or diagnosed with COVID-19, which limits the discussion with similar articles.

Keywords: COVID-19; Coronavirus; Lactation; Breast feeding.

1. Introduction
The disease caused by the SARS-CoV-2 coronavirus, called COVID-19, presents a clinical picture that varies from asymptomatic infections to severe respiratory conditions (OMS, 2019; Ma et al., 2020). Due to the large number of patients infected by this new virus, the World Health Organization (WHO) declared a COVID-19 pandemic. With the advent of the pandemic, millions of people around the world became sick and millions more died. In Brazil, the Ministry of Health pointed...
to an alarming mortality rate (Worldometer, 2020; Brasil, 2020).

In the context of the pandemic, because pregnant women are in a state of lower immunity, they are more susceptible to the virus (Wang et al., 2020). To date, there is a paucity of data on the repercussions of COVID-19 on pregnancy and on the transmission of its agent vertically, through breastfeeding. Breast milk offers protection against many diseases and is the best source of nutrition for most babies. There are rare contraindications to breastfeeding, just systematic screening recommendations for any suspected COVID-19 infection during pregnancy. Prolonged follow-up of the mother and fetus/baby is a recommendation if infection is present (Favre et al., 2020).

No data proves transmission of the COVID-19 virus through breast milk. (Rasmussen et al., 2020). In addition, considering that there is no scientific evidence on the presence of the new coronavirus in the breast milk of infected women, breastfeeding is an act that should be encouraged with caution and prudence. However, mothers diagnosed as a suspected or confirmed case should follow the recommendations related to breastfeeding and hand hygiene to avoid contamination of the baby (Chen et al., 2020).

Other information compiled by the United Nations Children's Fund (UNICEF) reveals that symptomatic mothers, as long as they are free from severe signs and symptoms and are willing, should wear N-95 masks to care for their baby (including while breastfeeding). Furthermore, if the mother is very sick, she should be encouraged to express the milk and offer it to the child through a clean cup and/or spoon, following the same methods of preventing contamination (FNUI, 2020).

It is therefore necessary that health professionals who care for breastfeeding women, including nurses, provide quality health care for a better offer of care for this woman affected by COVID-19. This attention should take place from the moment this woman seeks basic health care until her hospitalization and discharge. In any case, the successive investigation of the health needs of this clientele is of considerable importance, especially due to the clinical and epidemiological relevance of the disease and the scarcity of studies and reliable statistics on the relationship between COVID-19 and breastfeeding.

Given the importance of breastfeeding and the need for specialized and safe care for pregnant and postpartum women diagnosed or suspected of having COVID-19, the following guiding question arose: What are the general recommendations for the practice of breastfeeding in the face of infection by the new coronavirus?

Thus, considering the aforementioned aspects, the present study aimed to analyze the general recommendations for the practice of breastfeeding in the face of infection by the new coronavirus. This integrative review was relevant due to the survey of evidence available in the literature for the improvement and foundation of nursing practice in the context of breastfeeding. This study can contribute to improving the care provided to postpartum women diagnosed with or suspected of having COVID-19, with a view to publishing the synthesis and critical analysis of studies already produced on the subject.

2. Methodology

This is an integrative literature review, which aims to gather and synthesize research results on a given topic or issue in a systematic and orderly manner, contributing to the deepening of the knowledge of the investigated topic (Mendes et al., 2008). To carry out this integrative review, the authors first identified a research question. Then, the criteria for inclusion and exclusion of articles were established. The authors of the present study followed the following steps: sample selection by searching the databases, summarizing the information extracted from the selected articles, evaluating the studies, interpreting and discussing the results and, finally, presenting the review and knowledge synthesis (Mendes et al., 2008).

The guiding question of this study was the following: What are the general recommendations for the practice of breastfeeding in the face of infection with the new coronavirus? The construction of the question involved the acronym PICO (Brasil, 2012), being ‘P’ for population (postpartum women); Intervention ‘I’ (recommendations on breastfeeding in the time
The articles found with the searches carried out in the databases were submitted to exploratory, selective and analytical reading through which the inclusion criteria were applied. Thus, the final sample of this integrative review consisted of 10 articles (Table 1).

### Table 1 - Selection process of scientific articles listed in this integrative literature review.

<table>
<thead>
<tr>
<th></th>
<th>PubMed</th>
<th>LILACS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production found</td>
<td>61</td>
<td>380</td>
<td>441</td>
</tr>
<tr>
<td>Non-original research article</td>
<td>-</td>
<td>168</td>
<td>168</td>
</tr>
<tr>
<td>Not published between 2019/2020</td>
<td>48</td>
<td>157</td>
<td>205</td>
</tr>
<tr>
<td>Did not address the topic of study</td>
<td>5</td>
<td>53</td>
<td>58</td>
</tr>
<tr>
<td><strong>Total selected</strong></td>
<td>8</td>
<td>2</td>
<td><strong>10</strong></td>
</tr>
</tbody>
</table>

Source: Authors (2020).

Below, in Table 2, is the description of the summary of characteristics, level of evidence, objectives, results and conclusions of the studies. Of the ten articles selected, two are in Brazilian journals, in the LILACS database. In addition, eight articles were of international origin, two from China, two from the USA, one from Australia, one from Italy, one from Germany and another from the United Kingdom, all selected from the PubMed database.
All studies are from 2020. Regarding the type of methodology, seven studies were cross-sectional and exploratory, two were cohort and one was a case study. As for the level of evidence, six studies presented evidence level six, two studies presented evidence level five and the other two studies presented level four.

<table>
<thead>
<tr>
<th>Category</th>
<th>Article, year, place, method, Database and level of evidence</th>
<th>Objective</th>
<th>Results and conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Article 1 (Chen et al., 2020) China, Wuhan Prospective Cohort Study Level 4</td>
<td>To assess the clinical features of COVID-19 in pregnancy and the potential for intrauterine vertical transmission of COVID-19 infection.</td>
<td>Currently, there is no consolidated evidence of vertical transmission: there was no proof that the virus was present in the amniotic fluid, umbilical cord, oropharyngeal swab of newborns and in the breast milk of 9 analyzed puerperal women.</td>
</tr>
<tr>
<td></td>
<td>Article 2 (Ortiz et al., 2020) Australia, Southport Case Study Level 6</td>
<td>To report the case of an uncomplicated vaginal delivery in a SARS-CoV-2 positive mother.</td>
<td>One newborn underwent 19 tests within 24 hours of delivery and all were negative for SARS-CoV-2. The child continued on exclusive breastfeeding.</td>
</tr>
<tr>
<td></td>
<td>Article 3 (Davanzo et al., 2020) Italy, Trieste Exploratory and Descriptive Study Level 6</td>
<td>Build measures for COVID-19 infection control through the promotion of breastfeeding and the initial safe mother-infant relationship after birth.</td>
<td>Based on current scientific knowledge, breast milk from a mother with COVID-19 is not a vehicle of transmission. It is speculated that, similar to the SARS-CoV epidemic of 2002-2003, antibodies specific for SARS-CoV-2 pass through the COVID-19 mother’s breast milk to the baby within a few days of illness onset, possibly modulating the clinical expression of the baby’s infection.</td>
</tr>
<tr>
<td></td>
<td>Article 4 (Stumpfe et al., 2020) Germany, Erlangen Exploratory Study Level 5</td>
<td>Provide an overview of severe acute respiratory syndrome (SARS) novel coronavirus 2 (SARS-CoV-2) and, in particular, deduce potential risks and complications for pregnant patients from it.</td>
<td>Given that no pathogen has been isolated from breast milk in the tests performed, so far, transmission via breastfeeding is unlikely.</td>
</tr>
<tr>
<td></td>
<td>Article 5 (Mullins et al., 2020) UK, London Exploratory Study Level 5</td>
<td>Guide health policy and management of women affected by COVID-19 during pregnancy.</td>
<td>There was no evidence of vertical transmission. Babies born to mothers who are suspected/infected with COVID-19 can receive breast milk.</td>
</tr>
<tr>
<td></td>
<td>Article 6 (Marinelli &amp; Lawrence, 2020) USA, Connecticut Prospective Cohort Study Level 4</td>
<td>To evaluate the effectiveness of the use of antimicrobials in the treatment of SARS-CoV-2.</td>
<td>So far, the first and only report of six milk samples from infected mothers in China has been negative. Mothers with suspected, probable, or confirmed COVID-19 infection should feed their babies according to standard infant feeding guidelines, with appropriate precautions to protect and control infections.</td>
</tr>
<tr>
<td></td>
<td>Article 7 (Diane, 2020) United States, Philadelphia Cross-sectional Study Level 6</td>
<td>Provide guidance on breastfeeding and COVID-19 and reaffirm why it is of paramount importance to promote and protect the use of human milk and breastfeeding.</td>
<td>Studies with women infected with the new coronavirus did not reveal the presence of the virus in human milk.</td>
</tr>
<tr>
<td></td>
<td>Article 8 (Procianoy et al., 2020) Brazil, Rio Grande do Sul Exploratory Study Level 6</td>
<td>Reflect current knowledge about neonatal and COVID-19.</td>
<td>Due to the lack of evidence for mother-to-child transmission, as well as for transmission through breast milk, most scientific organizations recommend not separating mothers and newborns, with the aim of promoting breastfeeding and neonatal bonding.</td>
</tr>
<tr>
<td></td>
<td>Article 9 (Monteleone et al., 2020) Brazil, São Paulo Exploratory Study Level 6</td>
<td>Report and discuss current evidence of COVID-19 infections during pregnancy and their potential consequences for assisted reproduction care</td>
<td>SARS-CoV-2 infections are similar to infections in women with COVID-19 pneumonia. There is no evidence of vertical transmission of SARS-CoV-2 in late pregnancy.</td>
</tr>
</tbody>
</table>

Source: Authors (2020).
4. Discussion

All pregnant and lactating women should receive breastfeeding guidance. These mothers must obtain correct information/guidance from qualified and scientifically based professionals. From the acquisition of knowledge and quality information, this family will certainly have more security and empowerment necessary for the practice of breastfeeding.

Only the study by (Wang et al., 2020), a study of Chinese origin, contraindicates breastfeeding in suspected and confirmed cases. This evidence denotes the not ruled out possibility of vertical viral transmission, even in the absence of confirmed cases. An opinion issued in a consensus of Chinese experts is in favor of this evidence by stating that, in theory, the possibility of vertical transmission of COVID-19 could be real (Monteleone et al., 2020).

These specialists reinforce the importance of research that seeks to review the possibilities of transmission of the virus in breast milk. They also describe the need to screen for the presence of the new coronavirus in human milk from healthy donors. This is due to the possibility of the virus being present in the milk during the incubation period of the disease. However, there is no case of vertical transmission of the new Coronavirus (Monteleone et al., 2020).

Given the current context of the COVID-19 pandemic, most of the evidence from the review recommends maintaining breastfeeding, showing that breastfeeding is safe and indicated in cases of COVID-19. Of the articles that deny the vertical transmission of the new coronavirus, one of them was a clinical study with nine patients with pneumonia caused by COVID-19. In six of them, the researchers investigated the presence of the virus in the amniotic fluid, umbilical cord blood, breast milk and swab from the newborn's oropharynx. All samples were negative.

Thus, there are no records of vertical transmission during pregnancy, nor in the neonatal period through breastfeeding (Chen et al., 2020). In Brazil, it was necessary to implement a recommendation with the Technical Note COVID-19 N° 12/2020, which contraindicated breastfeeding in suspected and confirmed cases (Brasil, 2020). However, sometime later, the country's Ministry of Health issued a new Technical Note, No. 7/2020, recommending the practice of breastfeeding by women with COVID-19 or suspected of having this disease (Brasil, 2020).

The separation of the mother and child in cases of contraindication to breastfeeding can have consequences for the adherence and maintenance of breastfeeding later. Therefore, it is important that this recommendation favorable to the practice of breastfeeding remains in force until there are more robust studies that prove the possibility of vertical transmission of the new variants of the disease.

The Royal College of Obstetricians and Gynecologists (RCOG) is very clear in advising that mothers and babies should be kept together and consequently questions the Chinese recommendation to routinely separate the newborn from the COVID-19 mother. According to the RCOG, the separation between mother and newborn must be justified by the mother's poor health status, need to perform therapies for the newborn, admission to an adult or neonatal ICU or both, etc. In cases that need to separate the binomial, this woman should receive support and guidance regarding the extraction and supply of human milk to her child (Ortiz et al., 2020).

Two reviews on the subject, one from the US Centers for Disease Control and Prevention (CDC) and the other from the London RCOG, emphasize that breastfeeding is important along with the necessary care. Among the necessary care is the use of a mask by the breastfeeding woman and hand washing before feedings (Ortiz et al., 2020; CDC, 2019). Therefore, except for any intercurrence that requires the separation of the binomial, such as, for example, the worsening of maternal health conditions, it is perfectly possible for mother and child to remain in a rooming-in system until hospital discharge (Ortiz et al., 2020).

Both publications stated that the benefits of breastfeeding outweigh any potential risks of transmitting the virus through breast milk. Thus, women with COVID-19 who wish to breastfeed should be encouraged to do so and take precautions...
to prevent viral spread to the newborn and consider the possibility of requesting the help of someone who is healthy to offer milk breast milked to the baby. The lactating mother does not appear to transmit the virus through breast milk, either by breastfeeding or by offering milk expressed by a mother with confirmed/suspected COVID-19 (Stumpf et al., 2020).

To guide mothers who wish to maintain breastfeeding during COVID-19 infection, Technical Note No. 15/2020, prepared by the Ministry of Health, recommends that they always wash their hands with soap and water and/or use gel alcohol to 70% on hands before touching the baby or before expressing breast milk. Wearing a mask during breastfeeding and avoiding talking during breastfeeding are also important recommendations (Vida, 2020).

For mothers who have a confirmed/suspected case and feel unable to breastfeed and who choose to pump breast milk, there are the following recommendations: wash your hands with soap and water and clean the pump after each use. Another important recommendation is to offer breast milk expressed with a clean cup and/or spoon, by the mother herself if she so wishes and is healthy enough to do so, or by a person who does not show signs or symptoms of illness and with whom the baby feels comfortable (OMS, 2020; SBP, 2020).

It is noteworthy that the extraction of breast milk, even during the disease period, is important to maintain milk production. This is because milking and/or sucking the baby favors the maintenance of production by lactating women, allowing mothers to breastfeed while they recover (Brasil, 2015).

The nurse is fundamental in the assistance and care of women with suspected or confirmed COVID-19. The results of this study also allow this professional to guide and outline their conduct correctly. Finally, this integrative literature review allows the incorporation of its results, which are scientific evidence, in clinical practice in a clear and understood way, based on the synthesis of the results of the research found. This contributes to deepening knowledge and improving the practice of breastfeeding in times of the COVID-19 pandemic.

There is a need for constant training of professionals who assist women, pregnant and postpartum women in relation to the practice of breastfeeding. This service must be carried out in a way that prioritizes dialogue, that is, qualified listening, promoting the empowerment of this clientele. The importance of the role of the health professional in this scenario is evident, as they have the vocation of health education and are responsible for counseling and guidance. These are the recommendations available until the day of the integrative review, so they are subject to review through new publications and scientific studies.

With this study, it is possible to identify the best recommendations on the practice of breastfeeding for mothers affected by COVID-19. In addition, the results of this study strengthen the knowledge of pregnant and postpartum women with true information about breastfeeding at the time of SARS-CoV-2 infection, contributing to the clarification of doubts. To date, few consistent studies linking COVID-19 and breastfeeding are available in scientific virtual libraries and databases; this is because current knowledge about coronavirus 2 (SARS-CoV-2) infection is limited. There have also been a small number of studies on the contraindication of breastfeeding in case the mother has COVID-19 (SARS-CoV-2).

5. Final Considerations

Most studies addressed the recommendation to maintain the practice of breastfeeding in women with COVID-19. These studies reinforce the importance of counseling, the necessary care during the act of breastfeeding, in addition to recognizing the benefits of breastfeeding. However, a chain of Chinese researchers contraindicates breastfeeding by infected or suspected COVID-19 mothers. The evidence available in the literature on COVID-19 and breastfeeding needs further investigation and discussion. Publications on this topic, as it is a new topic, are in continuous production, so it is essential to keep up with changes. The large number of research on the subject defends and favors breastfeeding for women suspected or diagnosed with COVID-19, which limits the discussion with similar articles. Therefore, it is suggested that researchers in the
area can focus on carrying out more robust experimental studies that can prove or not the possibility of transmission of the virus through breastfeeding and the most recommended recommendations to be taken from this evidence.

References


