



### **REVIEW ARTICLE**

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## COVID-19 PANDEMIC AND THE BREASTFEEDING PROCESS BY MOTHERS INFECTED: SCOPING REVIEW

# PANDEMIA DE COVID-19 E O PROCESSO DE AMAMENTAÇÃO POR MÃES INFECTADAS: SCOPING REVIEW

## PANDEMIA DE COVID-19 Y EL PROCESO DE LACTANCIA MATERNA POR MADRES INFECTADAS: SCOPING REVIEW

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#### **ABSTRACT**

**Objective:** To map the literature and describe the repercussions of the COVID-19 pandemic on the breastfeeding process by mothers infected with SARS-CoV-2. **Method:** Scoping review, in the CINAHL, Elsevier, LILACS, MEDLINE/PubMed, SCOPUS-Elsevier and Web of Science databases, using MeSH and DeCS, between December 2021 and January 2022. **Results:** 44 articles were included. The analysis led to the emergence of two categories: "Negative repercussions of the pandemic on breastfeeding", such as the reduction of family visits, early weaning, separation from the binomial and psychological repercussions and "Adaptations in the daily care of the binomial and family", which addressed aspects of monitoring of health professionals, in person or virtually, adoption of precautionary measures and lactation by virtual connection. **Conclusion:** The pandemic contributed to early weaning, adequacy of the family context and the care process, as well as the use of health technologies as a tool for maintaining care.

**Descriptors:** breastfeeding; nursing; COVID-19; pandemics; weaning.

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#### **RESUMO**

**Objetivo:** Mapear a literatura e descrever as repercussões da pandemia de COVID-19 no processo de amamentação por mães infectadas pela SARS-CoV-2. **Método:** *Scoping review*, nas bases de dados *CINAHL*, *Elsevier*, *LILACS*, *MEDLINE/PubMed*, *SCOPUS-Elsevier e Web of Science*, utilizando MeSH e DeCS, no período de dezembro de 2021 e janeiro de 2022. **Resultados:** Foram incluídos 44 artigos. A análise fez emergir duas categorias: "Repercussões negativas da pandemia na amamentação", como a redução das visitas de familiares, desmame precoce, separação do binômio e repercussões psicológicas e "Adaptações no quotidiano de cuidado ao binômio e família", que abordou aspectos do acompanhamento dos profissionais de saúde, presencial ou virtualmente, adoção de medidas de precaução e lactação por ligação virtual. **Conclusão:** A pandemia contribuiu para o desmame precoce, adequação do contexto familiar e do processo de cuidar, assim como a utilização de tecnologias em saúde como ferramenta para a manutenção do cuidado.

**Descritores:** aleitamento materno; enfermagem; COVID-19; pandemias; desmame.

#### **RESUMEN**

Objetivo: Mapear la literatura y describir las repercusiones de la pandemia de COVID-19 en el proceso de lactancia de madres infectadas por SARS-CoV-2. Método: Scoping review, en las bases de datos CINAHL, Elsevier, LILACS, MEDLINE/PubMed, SCOPUS-Elsevier y Web of Science, utilizando MeSH y DeCS, entre diciembre de 2021 y enero de 2022. Resultados: se incluyeron 44 artículos. Del análisis surgieron dos categorías: "Repercusiones negativas de la pandemia en la lactancia materna", como la reducción de visitas familiares, destete precoz, separación del binomio y repercusiones psicológicas y "Adaptaciones en el cuidado diario del binomio y familia", que abordó aspectos del seguimiento de los profesionales de la salud, de forma presencial o virtual, adopción de medidas cautelares y lactancia por conexión virtual. Conclusión: La pandemia contribuyó para el destete precoz, la adecuación del contexto familiar y del proceso de cuidado, así como el uso de las tecnologías de la salud como herramienta para el mantenimiento del cuidado.

**Descriptores:** lactancia materna; enfermería; COVID-19; pandemias; destete.

#### INTRODUCTION

The World Health Organization (WHO) describes the infection caused by the Coronavirus Disease 2019 (COVID-19) virus as the disease arising from the new Coronavirus 2, severe acute respiratory syndrome (SARS-CoV-2), which has high rates of transmissibility, with the main symptoms being fever, dry cough and tiredness.<sup>1</sup> The COVID-19 pandemic has impacted people's lives, health services and professionals' recommendations. In this

scenario, pregnant women had the context of gestation and breastfeeding modified due to the pandemic period, as recommendations that were previously recommended and related to the breastfeeding process, at the beginning of the pandemic were placed in doubt due to the disease.<sup>2</sup>

Today, the WHO says that pregnant or postpartum women, even if infected, should be encouraged to start or continue breastfeeding, if they wish.<sup>2</sup> Mothers must be informed that the benefits of

breastfeeding substantially outweigh the potential risks for transmission, being the gold standard for exclusive feeding of children under six months<sup>2</sup>; however, in the first months of the pandemic, this recommendation was not clear and raised doubts, both among parents and health professionals.

In addition to strengthening the bond between the mother-baby binomial, breastfeeding stimulates the child's cognitive development, protects against infections, reduces the chance of developing allergies, diarrhea and chronic diseases and reduces mortality from preventable causes in children under the age of five years.<sup>3</sup>In addition, it reduces the risk of developing breast cancer in women who breastfeed and helps in the postpartum period, as the uterus contracts and returns to normal size more quickly.<sup>3</sup>

However, at the beginning of the pandemic, this situation generated extensive debate among health professionals and researchers, causing the need for routine adjustments. In this context, for breastfeeding to occur more safely, it is necessary to ensure that, prior to offering breast milk, hand hygiene, respiratory etiquette and the use of masks occur.<sup>3-5</sup>

It is now known, according to the WHO, that breastfeeding should be maintained even in the current pandemic context, including under suspicion or

confirmation of the mother's COVID-19 infection.<sup>3-5</sup> Since the benefits of breastfeeding and skin-to-skin contact between mother and baby after birth have already been proven, these facts outweigh any risk that the coronavirus may pose to the child.<sup>3-5</sup> Therefore, understanding relationship between the disease, both in health services and professionals affected family members, allows us to identify difficulties in the breastfeeding process and seek ways to improve health care focused on this issue, with consequent improvement in health outcomes actions to encourage exclusive breastfeeding (EBF).

Given the above and taking into account the changes and needs for adjustments caused by the COVID-19 pandemic, the following question arose: what are the repercussions of the COVID-19 pandemic on the breastfeeding process for mothers infected by SARS-CoV- 2? Thus, the objective of this study was to map the literature and describe the repercussions of the COVID-19 pandemic breastfeeding process for mothers infected with SARS-CoV-2.

#### **METHODS**

This is a scoping review<sup>6</sup>, conducted according to Joanna B's recommendations *Riggs Institute* (JBI) and the PRISMA extension for Scoping Reviews (PRISMA-

ScR) checklist, which details all stages of the process.<sup>6-7</sup>

JBI suggests the acronym PCC, corresponding to the population, concept and context, as a tool to assist in defining the guiding question and eligibility criteria. Regarding the population, mothers infected with SARS-CoV-2 were considered. In terms of concept, studies that addressed the breastfeeding process of mothers infected with SARS-CoV-2 were considered. Regarding the context, the COVID-19 pandemic period was considered.

As eligibility criteria, studies were used that addressed the impacts that the pandemic had on the breastfeeding process of children, when their mothers were infected with SARS-CoV-2. Due to the current nature of the topic, a time frame was used, considering publications from 2019 onwards. Studies could be in Portuguese, English or Spanish and should be primary, available in full in the databases consulted and in online format.

The searches were carried out in the following databases: Cumulative Index to Nursing and Allied Health Literature (CINAHL), with 266 results; EMBASE (Elsevier), with 28 results; Latin American and Caribbean Literature in Health Sciences (LILACS), with 31 results;

MEDLINE/PubMed (via National Library of Medicine), with 195 results; SCOPUS (Elsevier), with 41 results and Web of Science, with 120 results. The descriptors in Health Sciences (DeCS) were used in medical Subject Headings (MeSh terms): breastfeeding; breastfeeding; exclusive breastfeeding; COVID-19 pandemic; COVID-19; coronavirus; COVID-19; COVID-19 pandemic; SARS-CoV-2; breastfeeding; breast feeding, exclusive; Lactation, associated with the Boolean operators "AND" or "OR", such as the Boolean equation performed in the Web of Science database: (breastfeeding) AND ((sars-cov-2) OR (covid19)) AND (infant).

The selection of studies took place in independent January 2022, by two evaluators. In case of disagreement, these were resolved by a third evaluator. The studies were directed to the bibliographic management software/program called Rayyan® Intelligent Systematic Review and the study selection process was conducted according to the PRISMA Flow Diagram, starting with duplicate articles.<sup>8</sup> Afterwards, the information present in the title and abstract was analyzed and, in case of doubt about its relevance, the full text was analyzed. The steps for carrying out the searches are described in Figure 1.

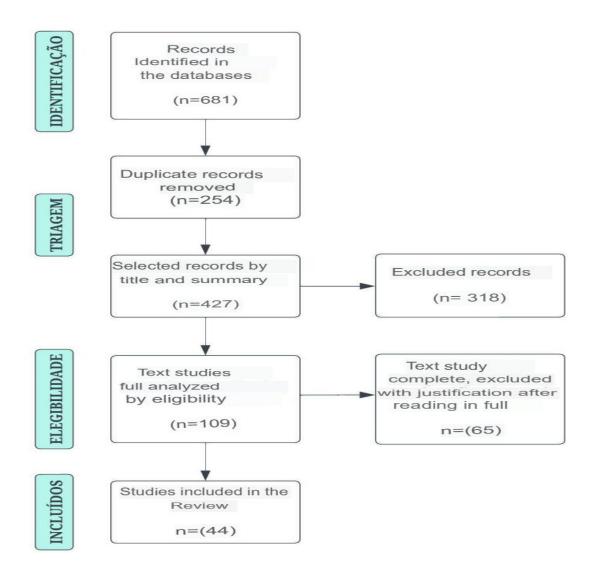


Figure 1. Flowchart of the study selection process, adapted from PRISMA

Source: Prepared by the authors, adapted from Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD et al8

Following JBI recommendations, a data extraction instrument was developed, aligned with the objective and the guiding question, consisting of a table with the following information: article number, title, location and year of the article, sample/study population, type of study, study setting and impact on breastfeeding. The instrument was used in a pilot phase consisting of five articles, aiming to test the extraction form

and become familiar with the source results.<sup>6-7</sup> The data extraction process was conducted by two independent reviewers.

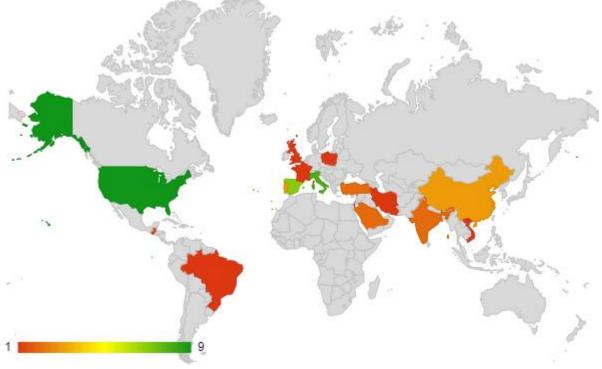
#### **RESULTS**

44 articles published between 2020 (95%) and 2021 (5%) were included in the study. Regarding the practice scenario of the studies, 95% were developed in the hospital

environment, while 5% addressed the internet scenario. Regarding their location, nine (19.6%) were carried out in the United States of America, eight (17.4%) in Italy, five (15.3%) in Spain, three (6.5%) in China

and Portugal, two (4.3%) in Saudi Arabia, India and Turkey, one (2.2%) in Brazil, Latin America, France, Europe, Iran, Israel, Vietnam, Poland, the United Kingdom and Guatemala (Figure two).

Figure 2. Location of countries in which the primary study was carried out

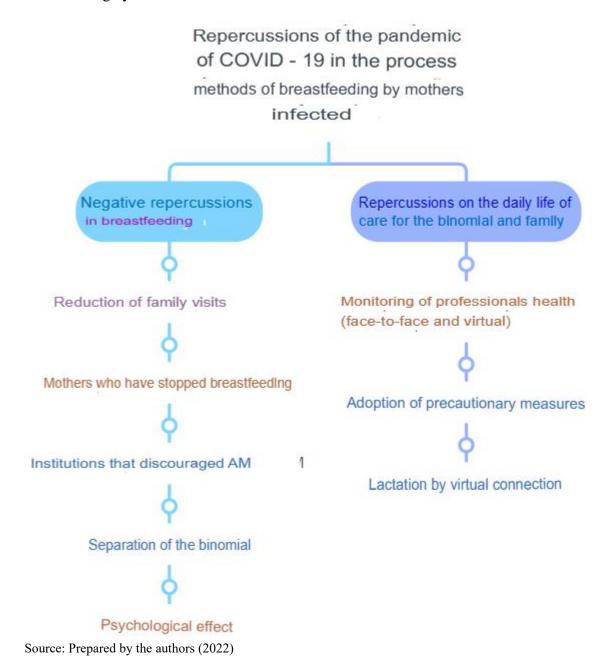


Source: Prepared by the authors (2022)

From the selected primary studies, two categories stood out, namely: "Negative repercussions of the pandemic on the breastfeeding process", which contextualized situations of reduction in family visits, mothers who stopped breastfeeding, institutions that discouraged breastfeeding, separation of the binomial

and psychological repercussions and "Adaptations in daily care for couples and families", which addressed aspects of monitoring of health professionals, in person or virtually, adoption of precautionary measures and lactation via virtual connection (Figure 3).

**Figure 3**. Diagram of categories and themes on the repercussions of the pandemic on breastfeeding by mothers infected with SARS-CoV-2



# NEGATIVE REPERCUSSIONS OF THE COVID-19 PANDEMIC ON THE BREASTFEEDING PROCESS

It can be seen that, in studies carried out in the first months of the pandemic, health institutions discouraged breastfeeding for fear of virus transmission. Given the negative repercussions of the pandemic, in Brazil9, hospitals did not follow the recommended recommendations for protection, promotion and support of breastfeeding, thus, the institutions covered in the study did not practice this act in the

first hour of life (golden hour). Concomitant to this, another study<sup>10</sup> addressed that the majority of Neonatal Intensive Care Units (NICU) did not allow/support mothers to continue breastfeeding. Some hospitals<sup>11</sup> recommended feeding with milk formula, discouraging breastfeeding, especially hospitals that were not child-friendly, which encouraged EBF less.<sup>12</sup>

In this scenario, many mothers stopped breastfeeding their children and the increased risk after the pandemic in terms of interrupting breastfeeding became evident9. In one study, the mother waited until the PCR test was negative<sup>13</sup> to breastfeed. In other studies<sup>14-19,26</sup>, mothers with a positive PCR breastfed less than negative mothers, either instructions from under the institutions or voluntarily. One of the studies also showed that symptomatic mothers had reduced breastfeeding rates when compared to asymptomatic mothers.<sup>20-21</sup> Rooming-in proved to be an ally, as before, infected mothers were isolated and did not breastfeed and, after some studies used this strategy, breastfeeding rates increased.<sup>22-24</sup>

There were mothers who suppressed lactation after being diagnosed with COVID-19<sup>25</sup>, and others who chose to express milk or use formula.<sup>26-32</sup> Some newborns (NB) only received breast milk after the fifth day of life and others after the 32nd day of life<sup>33-34</sup>. One study found that newborns were not directly breastfed or

received any expressed milk at any time.<sup>35</sup> Another study showed that no newborn was exclusively breastfed.<sup>36</sup>

As discussed in two studies<sup>14,37</sup>, breastfeeding rates decreased compared to evidence prior to the COVID-19 pandemic, however, after evidence emerged of the protection of breast milk against SARS-CoV-2 infection, these rates increased again.<sup>38</sup>

The separation of the mother-baby binomial was also addressed in several studies 16,23,27,29,33,39-40, and higher breastfeeding rates were observed in non-separated dyads compared to separated dyads, both in the hospital and at home. 20.23

The psychological repercussions of the pandemic deserve to be highlighted since techniques that offered a virtual bond between mother and baby in order to stimulate telelactation, virtual lactation or elactation, through video calls with mobile devices, played a complementary role during the pandemic. COVID-19 and potentially accelerated the emotional recovery of mothers separated from their babies during the postnatal period, playing an important role in initiating and sustaining breast milk.<sup>40</sup>

In this scenario, impacts on the mother's psychological health were evident. The fact of not breastfeeding the baby caused great concern for the mother, culminating in psychological repercussions,

as she had to express breast milk and discard it, generating a feeling of guilt. <sup>41</sup> The psychological impact of infection prevention methods has also been profound on pregnant women who not only often fear for themselves but also for their babies in the womb and postnatal period. <sup>33</sup>Additionally, mothers were affected by the inability to hold their babies, isolation of the baby for a few days, and/or inability to breastfeed. <sup>42</sup> One of the studies addressed the rejection of breastfeeding due to maternal infection and another addressed that the interruption of breastfeeding generated a situation of extreme anxiety in the mother. <sup>9.17</sup>

Mothers with symptomatic COVID-19 were afraid of transmission of the disease through breast milk. Mothers without symptoms, but with a positive diagnosis, did not feel afraid to breastfeed their babies.<sup>26</sup>

# ADAPTATIONS IN EVERYDAY CARE FOR THE BINOMIUM AND FAMILY

The pandemic caused by COVID-19 required adaptations in the daily care of the couple, family and health teams, on the occasion of maternal infection, in addition to close monitoring by health professionals in order to map possible new infections or transmissions, both during admission and discharge.<sup>28,43,44</sup> There were still professionals who, in the absence of the

mother, offered expressed breast milk and formula.<sup>30</sup>

All mothers in one of the studies demonstrated confidence in the team's recommendations<sup>25</sup>, and women who are separated from their newborns may need timely professional support to help begin the breastfeeding process after discharge.<sup>45</sup> Therefore, close monitoring of breastfeeding rates at hospital discharge and, subsequently, interventions to resume pre-pandemic practices by the professional team were necessary.<sup>11</sup>

Several studies have addressed the adoption of measures to avoid contamination during milk extraction and the breastfeeding process, including: respiratory hygiene and use of a face mask, hand hygiene guidelines before and after extraction and after adequate cleaning of the pump, cleaning of breasts and cots two meters apart. 9,13,23-24,30,43,46-51 Other articles discussed that, together with precautionary measures, the risk of transmission can be reduced. 18,28-29,32,45,50,52 Furthermore, visits due to the pandemic were no longer allowed.43

In cases where the mother-baby duo was separated due to the mother presenting a severe case of COVID-19 pneumonia, telelactation, virtual lactation or e-lactation were used, with the virtual calls being accompanied by healthcare professionals. health professionals working in a Neonatal

ICU (Intensive Care Unit).<sup>40</sup> The objective of the institution that applied this method was to remotely connect mothers to their newborns, allowing mobile lactation, making it possible to verify that the volume of expressed breast milk remained the same, regardless of whether maternal lactation was supported by virtual or direct contact.<sup>40</sup>

Another study addressed the telephone follow-up of newborns whose mothers had COVID-19 as an adaptation of daily care for the couple and family.<sup>53</sup> Professionals monitored the babies from hospital discharge until 28 days of life in order to verify possible transmissibility of the infection from mother to child, in addition to aspects related to breastfeeding and other perinatal care, demonstrating research participants' satisfaction with the approach. used.<sup>53</sup>

## **DISCUSSION**

At the beginning of the COVID-19 pandemic, in a technical note from the Ministry of Health, the information was that there was no published robust scientific evidence that established a causal link between the transmission of the coronavirus and breastfeeding.<sup>54</sup> Due to the scarcity of this evidence, there was no agreement regarding the recommendation on breastfeeding, whether for mothers with or under investigation for COVID-19.<sup>54</sup>

In March 2020, there was a single clinical study available on the vertical transmission of the new coronavirus, which discussed patients with pneumonia caused by COVID-19 and investigated the presence of the virus in samples of amniotic fluid, umbilical cord blood, milk maternal and swab from the newborn's oropharynx, where it was demonstrated that there was no presence of the virus in the secretions.<sup>55</sup> The WHO advised the maintenance breastfeeding due to a lack of evidence that proved that breast milk spread the coronavirus.54

The lack of initial evidence. combined with the fear that the mother felt about transmitting the virus to her child, resulted in studies that recommended the immediate separation of the mother and the newborn immediately after birth in order to in a preventive prevent, way, transmission of the virus. virus. 56-58 The newborn should remain in an isolation ward and be carefully monitored for any signs of infection and, during this period, direct breastfeeding was not recommended.<sup>56</sup> Therefore, there was guidance that this practice should occur after the period of isolation.57-58

The Center for Disease Control and Prevention (CDC), in 2020, in its Interim Guideline on Breastfeeding for Mothers Confirmed or Investigating for COVID-19, reaffirmed that breastfeeding provided

protection against various pathologies and that there were rare exceptions in which this practice did not was recommended. Thus, it advised that the beginning and continuation of breastfeeding should be determined by the mother, in agreement with her family and health professionals.<sup>59</sup>

Furthermore, the Royal College of Obstetricians and Gynaecologists (RCOG), in 2020, advised that, once the mother was informed and wanted to breastfeed, breastfeeding should be continued with the necessary precautions.<sup>60</sup> These precautions include washing hands before feedings, the use of a mask by the nursing mother, which must be changed immediately in case of coughing or sneezing or with each new feeding, cleaning the breasts, the crib being at least two meters apart in the rooming-in, rigorously following the recommendations for cleaning breast pumps after each use, offering breast milk in a cup, cup or spoon to the baby and, also, the recommendation that the person offering the milk to the baby learn do this with the guidance of a healthcare professional.<sup>55</sup>

Therefore, currently, evidence recommends that babies born to mothers who suspect or are infected with COVID-19 do not interrupt breastfeeding and follow standardized guidelines for infant feeding, applying all necessary precautions to prevent infection. and control and maintaining effective breastfeeding.<sup>61</sup>

Even with current evidence, some women may wish to interrupt EBF, and this decision may be associated with the lack of adequate professional guidance or erroneous popular knowledge.<sup>61</sup> In addition to some professionals recommending the interruption of breastfeeding, they often recommend the early introduction of other foods into the baby's diet without a good reason, which contributes to the reduction in EBF rates.<sup>61</sup>

Breastfeeding can be seen as a special and expected moment in a woman's life, and can, in some cases, become a challenge or frustration, depending on the reality and expectations of each postpartum woman. Therefore, opinions may differ according to each woman's lived experiences and perception. 61-62

Most mothers expect to breastfeed their children since pregnancy, realizing this desire soon after the birth of the newborn, of generating feeling personal fulfillment.63-64 However, even with difficulties in breastfeeding, many women do not give up breastfeeding, both because of their desire and because they know the importance of this practice for the child's health, as this practice enables the bond between mother and child, generating a feeling singular and unique for the binomial.62-63

In this context and problematizing the issue of the support network, a study reported that not being able to receive visitors in the immediate postpartum period was a real concern for mothers who had children during the COVID-19 pandemic, as they would not be able to count on help from the mother and/or family.<sup>64</sup>

Despite knowing the importance of breastfeeding and its benefits for the child's health, some women ended up developing feelings of fear or fear, especially those who experienced the postpartum period for the first time. 62-63 In this context, a study investigated the psychological impact of the pandemic on pregnant and postpartum women, who reported that having COVID-19 and being admitted to an ICU, having the baby admitted to a Neonatal ICU, having COVID-19 and losing the baby, transmitting coronavirus vertically to the baby, the baby acquiring a malformation if the pregnant woman has COVID-19, not having a companion at birth or in the immediate postpartum period, as well as not being able to breastfeed the child were the main concerns and fears.64-65

Regarding the separation of the mother-baby binomial, a study showed that mothers expressed a feeling of anguish for not being able to live the expected moment of feeling their children in their laps due to the team's need to carry out interventions and, in addition to breaking expectations of remaining with the babies after birth, a feeling of anguish related to the fear of losing their children also emerged.<sup>62-63</sup>

Therefore, during the pandemic, several types of services aimed breastfeeding were carried out, one of them was face-to-face breastfeeding consultancy, where it was noticed that, after receiving the information about importance breastfeeding, the breastfeeding women attended insisted on offering milk mother, even in the face of the adversities of the postpartum period, psychological changes, the pandemic scenario and the gap in the face-to-face support network, as they were social distancing, emphasizing importance of support from professionals in this process.<sup>64</sup>

The effectiveness of professional telephone support to promote breastfeeding is a strategy that has been widely used.<sup>65</sup> A study demonstrated that breastfeeding rates were better in groups that received guidance via mobile device (intervention group) than those who did not (control group), emphasizing the importance of monitoring by the healthcare team.<sup>66</sup>

A protocol created by a hospital provided virtual visits through video calls, in which professionals from the multidisciplinary team dressed up and made contact with family members, in order to encourage visual contact and voice listening between the dyad.<sup>67</sup> The objective of this action was to bring the family closer to their baby, encourage the formation of an emotional bond and minimize parents'

anxiety caused by separation from their child during the pandemic. The professional who carried out the virtual visit could encourage parents to talk to the baby, signaling to them the reactions in response to the voice, acting as a facilitator of this contact.<sup>67</sup>

In this way, telemedicine has demonstrated the potential to reduce the risks of exposure to the virus, promoting increased surveillance and counseling, dealing with social disparities and allowing professionals flexibility in caring for their patients.<sup>68</sup>

#### **CONCLUSION**

Among the negative repercussions evidenced in this study were the reduction in visits to family members, mothers who stopped breastfeeding, institutions that discouraged breastfeeding, separation of the binomial and psychological repercussions on the act of breastfeeding. Furthermore, with regard to adaptations in daily care for the couple and family, the findings discussed the monitoring of health professionals, whether in person or virtually, adoption of precautionary and stimulus measures and/or maintenance of breast milk extraction supported by a mobile device, through what was called virtual link lactation.

It is recommended that health professionals be frequently updated,

especially Nursing professionals who, in this context and through continuing education, have an essential role in monitoring, providing care and providing guidance based on scientific evidence to the mother-baby-family trinomial. The use of health technologies as a tool to overcome difficulties, sometimes imposed by physical distancing, also seems urgent.

Finally, it is suggested that longitudinal studies be carried out to closely monitor breastfeeding rates at hospital discharge and monitor the growth and development of children born during the pandemic period.

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