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Review Article (Pages: 1-9)

To Breastfeed or not to Breastfeed? An Overview in the Time of the COVID-19 Pandemic

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Abstract

Background: Despite the recognized benefits of breastfeeding for both mothers and infants, many women opt not to breastfeed due to insufficient knowledge regarding the transmission of COVID-19 through breast milk. This study aims to summarize the most recent evidence concerning breastfeeding during the COVID-19 pandemic.

Materials and Methods: In this overview, two independent researchers screened all reviews, systematic reviews, meta-analyses, and scoping reviews that addressed breastfeeding in the context of the COVID-19 pandemic. They searched the Scopus, EMBASE, Web of Science, Medline, CIVILICA, and CINAHL databases for full-text articles available in Persian or English, without any time restrictions up to November 2022.

Results: Vertical transmission of COVID-19 from a mother to her child cannot be confirmed or denied. Currently, there is no evidence of the virus being present in the amniotic fluid at the time of birth or in breast milk, indicating that breastfeeding should continue with strict adherence to safety and hygiene measures. The World Health Organization advises mothers suspected of or infected with COVID-19 to continue breastfeeding, considering the significant benefits of breastfeeding in relation to the potential risks.

Conclusion: Breastfeeding is the most effective protective measure for both healthy and at-risk infants, as well as their mothers, during the COVID-19 pandemic. Adhering to health protocols can mitigate the risk of COVID-19 transmission from mother to baby through breastfeeding.

Key Words: Breastfeeding; Breast milk; COVID-19, SARS-CoV-2.

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1- INTRODUCTION

There is well-documented evidence that breastfeeding is the optimal way to feed babies, as it protects children against morbidity and mortality from infectious diseases, starting at birth and continuing throughout infancy and childhood. Breastfeeding protects against respiratory infections and reduces the risk of otitis media and sudden infant death syndrome. In the long term, it lowers the risk of dental malocclusion, overweight/obesity, and diabetes mellitus. The World Health Organization (WHO) recognizes breast milk as the ideal food for infants because it is safe, clean, and contains antibodies that protect against many common childhood illnesses (1–4).

Based on the benefits of breastfeeding, the World Health Organization (WHO) recommends initiating breastfeeding within the first hour of a baby's life and continuing as often and as much as the baby desires (5). The WHO also advises exclusive breastfeeding for the first six months of life, followed by continued breastfeeding alongside nutritionally adequate and safe complementary foods for up to two years and beyond (1, 2, 6).

Coronavirus disease 2019 (COVID-19) is a contagious illness caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (7). The first known case was identified in Wuhan, China, in December 2019, and the disease rapidly spread worldwide, resulting in the COVID-19 pandemic (8–10).

Since late 2019, COVID-19 has significantly impacted individuals worldwide, including pregnant and breastfeeding women. Throughout the pandemic, concerns have emerged regarding the transmission of the virus from mother to baby during pregnancy and after delivery. Breastfeeding is vital for the health of both mother and child, making it essential to follow the World Health Organization's guidelines on exclusive breastfeeding for the first six months of life (1). This is especially important given the vulnerability and underdevelopment of infants' immune systems, particularly in premature babies (2). Consequently, the role of breastfeeding has become even more critical during the COVID-19 pandemic (11, 12).

COVID-19 remains largely unknown, and there is a scarcity of comprehensive information (7). Furthermore, numerous studies on breastfeeding during the pandemic need to be updated with more recent data (11, 12). Therefore, this overview aimed to investigate and summarize the latest published research—including reviews, systematic reviews, meta-analyses, and scoping reviews—on breastfeeding during the COVID-19 pandemic.

2- MATERIALS AND METHODS

This overview encompasses all reviews, systematic reviews, meta-analyses, and scoping reviews written in Persian or English that examine breastfeeding in the context of COVID-19. The objective is to synthesize existing literature to better understand the implications of breastfeeding during the pandemic and to inform healthcare practices.

The search for relevant studies was conducted across several electronic databases, including Scopus, EMBASE, Cochrane Library, Web of Science, CIVILICA, CINAHL, and Medline (via PubMed). The search parameters included articles published up to November 20, 2022, with no restrictions on publication date to ensure a comprehensive review of the available evidence.

Two independent researchers undertook the search process to minimize bias and ensure a thorough examination of the literature. Any discrepancies in study

selection or data extraction were resolved through discussion and consensus with a supervisor who oversaw the review process. To develop this overview systematically, we followed these key steps:

- Identifying the Research Question: We formulated specific questions regarding the effects and safety of breastfeeding during COVID-19, focusing on transmission risks and health outcomes for both mothers and infants.
- Locating Relevant Studies: A comprehensive search strategy was employed using keywords related to breastfeeding, COVID-19, maternal health, and infant health. This strategy was tailored for each database to maximize retrieval efficiency.
- Selecting the Studies: Inclusion criteria were established to filter studies based on relevance to our research question. Studies were included if they provided empirical data or systematic reviews related to breastfeeding practices during the COVID-19 pandemic.
- Summarizing and Reporting Findings: The selected articles were analyzed for key findings related to breastfeeding safety, recommendations from health organizations, and any reported outcomes associated with breastfeeding during COVID-19. A narrative synthesis was conducted to present the findings in a coherent manner.

Articles meeting the inclusion criteria were selected for detailed review, and additional relevant references were sought to ensure a robust analysis of current knowledge. Approval from a research ethics committee was not necessary, as the study analyzed only publicly available articles. The research adhered to ethical standards by respecting copyright laws and ensuring transparency in its methods and sources.

3- RESULTS

Based on the available literature and the objectives of this review, 15 articles were included: 12 review articles, two systematic reviews and meta-analyses, and one scoping review. The results regarding breastfeeding during the COVID-19 pandemic are summarized below:

1. A review of the latest studies on breastfeeding during the COVID-19 pandemic found no evidence of the COVID-19 virus in breast milk or its transmission through breastfeeding. The review concluded that all mothers with confirmed or suspected COVID-19 should continue to breastfeed their infants while following appropriate hygiene and respiratory precautions (13).

2. A review mapping the current evidence-based literature regarding breastfeeding and COVID-19 indicated that breastfeeding should not be interrupted, mothers and infants should not be separated, and skin-to-skin contact should not be discontinued. While maintaining normalcy as much as possible, general infection control measures should be implemented and strictly adhered to (14).

3. A review of publications on breastfeeding during COVID-19 aimed to summarize the latest evidence regarding the safety of breastfeeding among mothers who were suspected or confirmed to be infected and to compile recommendations from various organizations. The results indicated that the transmission of SARS-CoV-2 from infected mothers via breast milk is unlikely. However, due to the low quality of the current evidence, the safety of breastfeeding during COVID-19 remains inadequately understood. Therefore, further studies with robust designs are necessary to establish the safety of breastfeeding (15).

4. A scoping review aimed to determine the effectiveness of protective recommendations on perinatal care related to breastfeeding during the COVID-19

pandemic. Most of the reviewed papers (73 out of 86, or 85%) included recommendations concerning breastfeeding. Among these, 23 papers (32%) addressed the issue of feeding infants with expressed mother's milk (EMM) when direct breastfeeding was not possible. A smaller number of papers (22, or 30%) provided information about donor human milk (DHM) as an alternative in the absence of EMM due to COVID-19 (16).

5. A rapid review focused on mother-to-child transmission of COVID-19 during breastfeeding found no evidence of SARS-CoV-2 viral nucleic acid in breast milk. The review concluded that the benefits of breastfeeding outweigh the risks associated with SARS-CoV-2 infection in infants (17).

6. A review aimed at summarizing the current evidence-based literature on breastfeeding during COVID-19 indicated that there is no evidence of SARS-CoV-2 transmission through breast milk. Increasing studies suggest that antibodies present in a mother's milk can offer protection against severe and even morbid COVID-19 (18).

7. A review aimed at mapping the scientific evidence regarding the possible risks of vertical or horizontal transmission of SARS-CoV-2 through breastfeeding, as well as the benefits of human milk for a child's immunologic protection against COVID-19, was conducted. The results showed that although viral RNA has been detected in breast milk samples through reverse transcriptase polymerase chain reaction, there are no proven cases of vertical transmission via human milk. Additionally, there is evidence suggesting that antibodies against SARS-CoV-2 can be transferred through breast milk, providing potential immunological protection (19).

8. A systematic review (n = 14 studies) aimed to provide comprehensive evidence regarding potential virus transmission and antibody transfer through breast milk, as well as the experiences of mothers breastfeeding during the COVID-19 pandemic. The results indicated that, considering the benefits of breastfeeding and the lack of adequate evidence for the transmission of COVID-19 via breast milk, there were no indications against breastfeeding. However, adherence to universal protocols can help reduce the risk of mother-to-child transmission of COVID-19 (20).

9. A systematic review of 20 studies aimed to describe perinatal and neonatal outcomes in newborns exposed to SARS-CoV-2. The results from the current studies indicated that vertical transmission could neither be confirmed nor dismissed. The existing literature does not support abstaining from breastfeeding or separating mothers and newborns. Further evidence and data collection networks are needed to establish definitive guidelines and recommendations (21).

10. A review aimed to provide guidance to clinicians and families on breastfeeding in the context of SARS-CoV-2. The results indicated that breast milk did not play a significant role in the transmission of SARS-CoV-2, and mothers with suspected or confirmed COVID-19 could breastfeed directly with appropriate precautions (22).

11. A review of 20 studies aimed to provide guidance on breastfeeding for mothers with suspected or confirmed COVID-19. The results indicated that all maternal decisions regarding breastfeeding could be justified, as the understanding of COVID-19 infection remains limited. However, postpartum women and their families must be well informed to make a conscious choice based on the available literature (23).

12. A review examined the available evidence on the risks of infection transmission from mothers with COVID-

19 to their newborns through breastfeeding. The results indicated that, based on the currently available evidence and recognizing the benefits of breastfeeding when the health of both the mother and her newborn permits, healthcare providers should encourage direct breastfeeding or the use of expressed breast milk after a careful discussion of the risks of vertical transmission with the mother and her family. Preventive measures should be implemented by COVID-19-positive mothers to minimize droplet transmission of infection to infants during breastfeeding (24).

13. A review aimed to investigate the action plan for breastfeeding in postpartum women with SARS-CoV-2 and their newborns. The results strongly recommended breastfeeding for newborns of postpartum women with SARS-CoV-2, provided that the health of both the mother and the newborn allows it. If the mother's health does not permit direct breastfeeding, her breast milk should be expressed and kept unpasteurized (25).

14. A review aimed to summarize the current evidence-based literature on breastfeeding during COVID-19. The results indicated that even in communities where COVID-19 is prevalent, mothers should breastfeed, as it provides not only survival but also lifelong health and developmental advantages for newborns and infants, while also improving maternal health. Furthermore, the COVID-19 virus was not found in breast milk, and no samples of amniotic fluid, breast milk, cord blood, or neonatal pharyngeal swabs tested positive for the virus. Mothers should adhere to infection prevention measures, such as washing their hands, cleaning surfaces, and sneezing or coughing into a tissue while feeding their infants (26).

15. A review investigated the published data regarding the transmission risk of SARS-CoV-2 via human milk. The results indicated that most existing studies on women with COVID-19 did not detect the virus in breast milk. Based on the currently available data, breastfeeding and human milk are not contraindicated for infants born to mothers suspected or confirmed to have COVID-19 (27).

4- DISCUSSION

This rapid overview summarized the latest evidence on breastfeeding during the COVID-19 pandemic. The review of the results indicated that current literature does not support abstaining from breastfeeding or separating mothers and newborns, as breast milk is the best source of nutrition for infants, including those whose mothers have confirmed or suspected coronavirus infections. Furthermore, vertical transmission of COVID-19 from mother to child has not been documented.

The risk of viral transfer from a mother to her infant through breast milk appears to be very low. Limited studies conducted so far provide little evidence suggesting a risk of SARS-CoV-2 (the virus that causes COVID-19) transmission from mother to baby via breast milk. A systematic review of eight studies indicated that among 24 pregnant women with COVID-19 pneumonia during their third trimester, none of the breast milk samples tested positive for SARS-CoV-2 genetic material, suggesting that transmission through breast milk is unlikely (28).

Instead, the primary risk of viral transmission is through respiratory droplets and secretions from infected individuals to the newborn (29). Various studies have shown that breast milk samples from mothers suspected of or infected with COVID-19 tested negative for the coronavirus (30-32). Furthermore, one study reported that secretory immunoglobulin A (sIgA) immune responses against the COVID-19 virus were detected in 12 out of 15 breast milk samples from mothers with COVID-19

(33). Even in the context of the COVID-19 pandemic, breastfeeding remains safe and highly recommended. Current guidelines from all major health organizations, including the World Health Organization (34), UNICEF (35), the American College of Obstetricians and Gynecologists (36), the American Academy of Pediatrics (37), and the CDC (38), agree that mothers can and should breastfeed their newborns, even if they are positive for COVID-19.

Close contact with the mother and early, exclusive breastfeeding significantly contribute to a baby's well-being. Therefore, even if a mother has COVID-19, she is encouraged to touch and hold her baby, breastfeed safely while practicing good respiratory hygiene, engage in skin-to-skin contact, and share a room with her child. The World Health Organization recommends that mothers exclusively breastfeed their infants for the first six months of life. After that, mothers should continue breastfeeding while also providing nutritious and healthy foods until the child is two years old or beyond (1-6, 39).

If a mother is too unwell to breastfeed her baby due to COVID-19, she should receive support to safely provide breast milk through alternative means such as expressing milk, re-lactation, or using human donor milk from certified milk banks (39). Guidelines for COVID-19-positive mothers and their infants have evolved significantly since the pandemic began. Initially, infected mothers in Wuhan were advised to isolate from their newborns and stop breastfeeding. However, on March 18, 2020, the WHO released recommendations allowing direct breastfeeding with certain precautions when feasible (40). Currently, it is considered safe and is highly recommended by major global health organizations for COVID-positive women to breastfeed directly and maintain skin-to-skin contact with their newborns. Specific precautions must be taken to minimize the transfer of respiratory droplets and secretions, which are the primary methods of viral transmission for COVID-19 (41). These precautions include:

- Washing hands with soap and water before touching the baby,
- Wearing a face mask while feeding,
- Cleaning feeding equipment such as pumps and bottles with soap and water before use,
- Frequently sanitizing all high-contact surfaces in the environment.

If a mother is too ill to breastfeed directly, the next best option is to feed expressed milk to the infant remotely (34-38). Every effort should be made to keep the mother and child together while supporting the continued expression of milk to maintain milk stores. If a mother with confirmed COVID-19 is unable to breastfeed, the best alternatives are as follows (42):

- Expressed breast milk
- Donor human milk
- Wet nursing
- Infant formula as a last option.

5- CONCLUSION

The current literature does not support abstaining from breastfeeding or separating mothers from newborns during COVID-19. No documented evidence exists of vertical transmission from mother to child through breast milk. Breastfeeding remains safe and highly recommended when mothers with confirmed or suspected COVID-19 follow respiratory hygiene precautions to minimize droplet transmission risk.

The WHO's recommendations for breastfeeding initiation within the first hour and continuation up to two years apply equally to these mothers. COVID-19-positive mothers should practice hand

hygiene, wear masks during feeding, and clean equipment properly. Further research remains essential to refine these evolving guidelines.

6- CONFLICT OF INTEREST: None.

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