Research Article

Breastfeeding in Mothers Infected With COVID-19

Muaningsih Muaningsih*, Suryani Suryani, Mikawati Mikawati, and Indah Sari

Department of Nursing, Sekolah Tinggi Ilmu Kesehatan Panakukang, Makasar, Indonesia

ORCID
Muaningsih Muaningsih: https://orcid.org/0000-0002-7724-4738

Abstract. COVID-19 can be transmitted through droplets and direct contact. The World Health Organization has declared COVID-19 a public health emergency of international concern. Breastfeeding mothers who are infected with COVID-19 have a risk of transmitting it to their babies. Effective support for breastfeeding or formula milk for babies need to remain a priority so that the nutritional needs of babies can be met. The aim of this study was to explore breastfeeding among mothers infected with COVID-19. A literature review was used. 10 articles were found by manual screening. The variables examined were breastfeeding mothers during the COVID-19 pandemic, transmission of COVID-19 through breast milk, and breastfeeding management in mothers with unconfirmed and confirmed COVID-19 infections. Eight of the articles discussed the transmission of COVID-19 through breast milk, two discussed the management of breastfeeding in mothers without confirmed COVID-19, and eight in mothers with confirmed COVID-19. This study found that the presence of SARS-CoV-2 in breast milk has not been proven to date. We can conclude that the management of breastfeeding in mothers with unconfirmed and confirmed COVID-19 supports mothers to continue breastfeeding their babies while taking infection prevention measures. Mothers who are infected with COVID-19 with serious symptoms and who cannot breastfeed directly are advised to express their milk to be given to their babies or to use formula milk.

Keywords: breastfeeding, COVID-19 mother, COVID-19

Corresponding Author:
Muaningsih Muaningsih; email: asihmuaningsih@gmail.com

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1. Introduction

Coronavirus (COVID-19) is an infected virus caused by SARS – C0V-2. WHO declared Covid was an emergency case of international concern. Indonesia first reported Covid-19 on 2nd March 2020, with total 2 cases. According to data from the [1] regarding covid-19 infection in Indonesia, there were 6,760 confirmed cases, 590 deaths (8.7%), 747 recovered cases (11.1%), and 5,423 internal cases (80.2%).) were treated. The number of cases in South Sulawesi is increasing rapidly. Data from the [1] show the cumulative number of cases is 1,630, making South Sulawesi the fourth highest province after DKI Jakarta, East Java and West Java. According to data from the South Sulawesi Health Office (2020), the number of COVID-19 cases in Gowa waas very high with 113

cases recorded [2]. SARS-CoV-2 has an adverse impact on health, one of which is breastfeeding mothers who required special attention [3].

The World Health Organization (WHO), the American Academy of Pediatrics (AAP), the American Academy of Family Physicians (AAFP) and the Indonesian Pediatrician Association (IDAI) recommend exclusive breastfeeding for 6 months and continued for up to 2 years. Continuing breastfeeding beyond 6 months is accompanied by an appropriate nutritional diet and helps ensure good nutritional status and protects against disease [4].

Until now, there is not enough data to conclude that the vertical transmission of COVID-19 is caused by breastfeeding. In infants, the risk of contracting COVID-19 remains low, and the infection is usually mild or asymptomatic [5].

According to the regulations of the Society of Breastfeeding Medicine (ABM), hospital management for mothers with suspected or confirmed COVID-19 must be given two options: hospitalization or separation of mother and baby. The choice depends primarily on the general health of the mother and requires the family to make a decision. As an alternative to direct breastfeeding and/or expressing breast milk (if considered safe) [6].

2. Methods

The research method used was the Literature Review . There were 10 journals reviewed. The journal population at most was 116 respondents, in this study were breastfeeding mothers during the COVID-19 pandemic. The variables in this study were breastfeeding mothers during the COVID-19 pandemic, transmission of COVID-19 through breast milk, management of breastfeeding with mothers who were not confirmed to have COVID-19 and mothers who were confirmed to be COVID-19. The keywords used are management therapy AND breastfeeding mothers AND pandemic AND COVID-19 OR Coronavirus Disease 19. There were 10 articles used retrospective study methods, longitudinal studies, longitudinal observational cohort studies, observational cohort studies, and literature reviews. Ten articles discussed breastfeeding mothers during the COVID-19 pandemic, eight articles discussed the transmission of COVID-19 through breast milk, two articles discussed the management of breastfeeding with mothers without confirmed COVID-19, and eight articles discussed the management of breastfeeding with mothers with confirmed COVID-19.

3. Result

Table 1

Author and Year	Methods	Result
[7]	Design: Literature Review Population: Breastfeeding Mother Variables: breastfeeding during the COVID-19 pandemic, transmission of COVID-19 through breast milk, unconfirmed management, and confirmed COVID-19	Mothers who may have been exposed to COVID-19 should start and continue breastfeeding, and mothers with severe symptoms should express breast milk.
[8]	Design: Retrospective study Population: 22 respondents Variables: breastfeeding mothers during the COVID-19 pandemic, COVID-19 transmission through breast milk, confirmed COVID-19 management	Mothers with COVID-19, babies need temporary complementary foods until exclusive breastfeeding is met.
[9]	Design: Literature Review Population: breastfeeding mothers Variables: breastfeeding mothers during the COVID-19 pandemic, transmission of COVID-19 through breast milk, confirmed management of COVID-19	The presence of coronavirus antibodies detected in breast milk samples can prevent infection, so breastfeeding must be carried out.
[10]	Design: longitudinal study Population: 64 respondents Variable: breastfeeding mothers In both the COVID-19 group and the suspected mother, breastfeeding rates were significantly lower than in the non-COVID-19 group.i during the COVID-19 pandemic, transmission of COVID-19 19 through breast milk, unconfirmed and unconfirmed management of COVID-19.	In both the COVID-19 group and the suspected mother, breastfeeding rates were significantly lower than in the non-COVID-19 group.
[11]	Design: Longitudinal observational cohort study Population: 85 respondents Variables: breastfeeding mothers during the COVID-19 pandemic, transmission of COVID-19 through breast milk, confirmed management of COVID-19	Separation of mother and baby has an impact on breastfeeding outcomes and decreases the rate of direct breastfeeding during hospitalization and after discharge.
[12]	Design: Literature Review Population: Breastfeeding Mothers Variable: breastfeeding mothers during the COVID-19 pandemic, breastfeeding management with mothers with confirmed COVID-19	COVID-19 mothers from asymptomatic mothers give direct breast milk, expressed breast milk for mild symptoms, and severe symptoms are given donor breast milk (formula milk).
[4]	Design: Observational cohort study Population: 116 respondents Variable: breastfeeding mothers during the COVID-19 pandemic	During 5-7 days of life, 73 of the 82 infants were returned to their parents, and 9 were hospitalized.
[13]	Design: Literature review Population: breastfeeding mothers Variables: breastfeeding mothers during the COVID-19 pandemic, transmission of COVID-19 through breast milk, breastfeeding management with confirmed COVID-19 mothers	It is recommended that positive mothers have no symptoms of direct breastfeeding and control the infection, but if the mother is too sick, the baby should be treated separately and given fresh, unpasteurized breast milk.
[6]	Design: Literature review Population: breastfeeding mothers Variables: breastfeeding mothers during the COVID-19 pandemic, transmission of COVID-19 through breast milk, breastfeeding management with confirmed COVID-19 mothers	It is recommended that positive mothers have no symptoms of direct breastfeeding and control the infection, but if the mother is too sick, the baby should be treated separately and given fresh, unpasteurized breast milk.
[3]	Design: Literature review Population: Breastfeeding mothers Variables: breastfeeding mothers during the COVID-19 pandemic, transmission of COVID-19 through breast milk, confirmed management of COVID-19	For mothers with suspected or diagnosed COVID-19, appropriate precautions are taken when breastfeeding.

4. Discussion

4.1. Breastfeeding during Covid-19 Pandemic

According to research conducted by [7] that separation of mother and child has a negative impact on physical and mental health. In line with research conducted [9] separation of mother and child can have a negative impact on contact with mothers. In line with what was done by [3] separation between mother and baby is suspected of SARS-CoV-2 having a potential stress effect, thereby reducing milk production. Reinforced by research conducted [10] the long-term separation of mother and baby causes delayed breastfeeding and reduced milk production.

Research conducted by [6]said the separation of mothers and newborns was carried out individually, taking into account the mother's consent and hospital logistical guarantees. Research conducted by [12]whether infant care is combined or separated depends on the mother's health and family decisions. This study is in accordance with that conducted by [4]all infants are allowed to enter the room with their mother, and are separated by 2 meters with isolation unless they are breastfeeding.

Research conducted by [8] for mothers and babies who were separated due to medical conditions, breastfeeding can help the bonding process because it can prevent mental health disorders. According to [11] separation of mothers and asymptomatic newborns has a negative impact on breastfeeding outcomes. While research conducted by [13]that the time from the onset of symptoms to recovery is 12 to 32 days.

The evidence strongly supports breastfeeding, including scin-to-scin contact and IMD to support infant growth, and there is no reason to stop breastfeeding after SARS-CoV-2 infection [5].

According to the researcher's assumption, breastfeeding during the COVID-19 pandemic is by maintaining contact between mother and baby, taking precautions to prevent infection, wearing masks, washing hands with soap before and after breastfeeding, preventing spread through droplets. As for separate care, seriously ill mothers should be separated.

4.2. Transmission of COVID-19 through breast milk

Research conducted by [7] that there is currently no evidence that respiratory viruses can be transmitted through breast milk. Vertical transmission refers to the spread of pathogens from mother to baby before and after birth. This study is in accordance

with that conducted by [8]so far SARS-CoV-2 has not been confirmed in the placenta, umbilical cord blood, amniotic fluid or breast milk has not been proven. This study is also in accordance with what was done by [9] there is currently no evidence that breast milk can be transmitted vertically.

These results are in accordance with research conducted by [10] that the SARS-CoV-2 nucleic acid in breast milk has not been proven, even though the mother is said to be positive for SARS-CoV-2. This study is also in agreement with that conducted by [11] that because SARS-CoV-2 samples in amniotic fluid, umbilical cord blood and nasopharyngeal swabs detected in infants were all negative, SARS-CoV-2 was not transmitted vertically. to the baby.

In accordance with the results of research conducted by [6] that current knowledge does not support the spread of COVID-19 in the womb. This is reinforced by studies conducted by [13] showing that SARS-CoV-2 nucleic acid in mothers and breast milk were repeatedly negative, and transmission from mother to baby through breast milk was still very small, and breast milk could safely breastfeed directly to the baby. It is also reinforced by research conducted by [3] that although there is no evidence of vertical transmission of SARS-CoV-2, there is clear evidence that newborns are susceptible to horizontal transmission from person to person.

Currently, there is not enough data to conclude that the vertical transmission of COVID-19 is caused by breastfeeding. In infants, the risk of contracting COVID-19 remains low, and the infection is usually mild or asymptomatic. On the other hand, the consequences of not breastfeeding and mother-infant separation can be serious. In this regard, it appears that COVID-19 in infants and children has a much lower risk of survival and health than other infections protected by breastfeeding. in [5].

According to the researcher's assumption that until now there is no strong evidence that breast milk can be transmitted vertically, and no evidence that COVID-19 has been detected in breast milk, even though the baby's mother is said to be positive for SARS-CoV-2. Therefore, if the mother is able to breastfeed her baby, avoid separating the mother and baby as much as possible to minimize the risk of infection.

4.3. Breastfeeding among non infected mother

Research conducted by [7] found that starting and continuing to breastfeed infants of healthy or asymptomatic COVID-19 mothers because breastfeeding is a source of nutrition and provides the best protection for infants by controlling common infections

during the COVID-19 pandemic. While the research conducted [10], in this study COVID-19 and breastfeeding rates in suspected mothers indicate that breastfeeding rates are much lower than breastfeeding rates that have not been confirmed by COVID-19.

Mothers who are not suspected or confirmed to have COVID-19 do not need to take special precautions when direct breastfeeding or expressing expressed breast milk. Regardless of the COVID-19 status, mothers who use breast pumps must have knowledge of how to properly clean and disinfect breast pumps [5].

The researcher's assumption is that mothers who are not confirmed to have COVID-19 directly breastfeed their babies using a mask, wash their hands and wash their breasts with soap and running water. Meanwhile, for mothers who have not confirmed COVID-19, mothers must understand that their babies may be at risk of infection. To reduce the risk of transmission, a distance of 2 meters between mother and baby should be maintained when not breastfeeding.

4.4. Breast feeding among infected mother

Research conducted by [7] if a mother tests positive for COVID-19, she should use a special breast pump instead of sharing it with other mothers. This result is in accordance with what was done by [8] when the general health status of the mother cannot breastfeed directly, the mother should be encouraged to express breast milk and fresh breast milk be given safely to the baby while carrying out infection measures. The results of this study are supported by [6] Breast milk given to infants should not be pasteurized because pasteurization will reduce the biological and immunological value of breast milk. The study is also in accordance with that conducted by [9] newborns should be given breast milk that was previously obtained from their mother and has not been pasteurized.

Research conducted by [10] At breastfeeding rates are lower when separation of mother and baby is prolonged in mothers with COVID-19. This study is consistent with that conducted by [11] showing the separation of mothers and newborns has led to a decrease in breastfeeding rates during hospitalization and after discharge.

Research conducted by [3] has two ways, namely asymptomatic mothers or mothers with COVID-19 can immediately breastfeed directly, because the risk of transmission is often low. Both breast milk nutrition for mothers with moderate to severe COVID-19 symptoms cannot breastfeed directly. These results are in accordance with research conducted [12] that babies born under normal circumstances should breastfeed directly

when breastfeeding begins early. Mothers with mild COVID-19 symptoms or are breastfeeding with expressed breast milk. When a COVID-19 mother is too sick and is not allowed to breastfeed her baby, then give donor breast milk or formula milk.

According to WHO standard nutrition guidelines must be followed by infection control measures that need to be taken. The Centers for Disease Control and Prevention (CDC) reports that mothers should express breast milk with a pump after proper hand hygiene is practiced and that breast milk can be given to the baby by bottle by a healthy health worker, when the baby is temporarily separated from the mother after delivery. Mothers should pay close attention to hand hygiene before, during and after expressing breast milk, and breast pumps should be disinfected before and after each expression.

According to the researcher's assumption, breast milk can protect babies from infectious, allergic and metabolic diseases through various components of immune substances contained in it. In infants, the risk of contracting COVID-19 remains low, and the infection is usually mild or asymptomatic. On the other hand, the consequences of not breastfeeding and separating the baby from the mother can be serious.

5. Conclussion

Breast milk is the best food, especially the first six months after the baby is born. Currently, there is no strong evidence that SAV-CoV-2 is present in the breast milk of mothers with COVID-19. Therefore, for breastfeeding management for undiagnosed and confirmed COVID-19 mothers, strict infection prevention measures should be minimized. However, if the mother is seriously ill and cannot breastfeed her baby directly, it is recommended that the mother express her milk or use formula milk.

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Conflict of Interest

We declare no conflict of interest for this study.

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