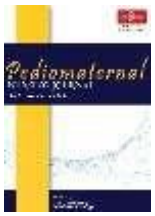

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Original Research

Protections and Social Support of Exclusive Breastfeeding for Mothers with COVID-19: Message for Health Promotion during The Pandemic

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ABSTRACT

Introduction: The COVID-19 pandemic is a concern regarding the potential failure of exclusive breastfeeding in mothers with COVID-19. This study reviews previous research describing the protective and social support practices of exclusive breastfeeding in mothers with COVID-19.

Methods: A systematic search was undertaken in March-June 2021 utilizing databases such as Scopus and PubMed for articles that fit the inclusion criteria and had a deadline of 2020-2021. The final 16 papers were eligible for a full text evaluation after being eliminated from the pool of 462 articles. The Newcastle-Ottawa Scale was used to evaluate the study's quality (NOS).

Results: We identified 16 studies reporting 1,865 cases of maternal infection with COVID-19. An overview of breastfeeding protection practices is carried out through rooming-in and post-delivery skin contact. Using tight precautions like as wearing a mask, social isolation, and keeping hand and breast hygiene are all part of this technique. COVID-19 is not transmitted to all kids born to women who use breastfeeding protection. In order to ensure that breastfeeding continues and precautions are followed, social support from health workers, families, and health care management must be considered.

Conclusion: In mothers with COVID-19 breastfeeding is still recommended but must be supported by strict health protocols. To protect exclusive breastfeeding practices and ensure that COVID-19 precautions are followed, social assistance cannot be overlooked

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1. INTRODUCTION

The COVID-19 outbreak was first reported in Wuhan, China, at the end of December 2019. WHO reported that as of January 31, 2021, 223 countries had cases of COVID-19 with a total of 102,083,344 confirmed cases and 2,209,195 deaths (WHO, 2021).

The family will continue to give birth and must carry on a new life into the world. As a health care provider it is necessary to educate the public about the importance of using breast milk and breastfeeding behavior as a lifesaving medical intervention. Currently, there is insufficient evidence of longitudinal transmission between mother and baby. However, after delivery, the infection can come from the mother and other caregivers. Based on available data, early and prolonged skin contact, exclusive breastfeeding is the best strategy to reduce morbidity and mortality for both mother and baby with COVID-19 (Tran et al., 2020).

Breast milk is the best source of nutrition for infants, according to the WHO, including those whose mothers have been diagnosed with COVID-19. Breastfeeding is safe as long as the infected mother takes the necessary precautions (World Health Organization(WHO), 2020). If the mother suffers from severe COVID-19 infection or complications, it is recommended to continue to give breast milk by expressing or donating breast milk while implementing health protocols (Martín F de la M, 2020). Breastfeeding should consider the long-term effects if the practice is discontinued due to COVID-19 (World Health Organization(WHO), 2020).

Social support from the government, health workers, communities and families plays an important role in the sustainability of breastfeeding practices for mothers confirmed with COVID-19. The CDC conducted a COVID-19 survey (July 15–August 20, 2020) and reported that in mothers with suspected or confirmed COVID-19, 14.0% of hospitals discouraged and 6.5% prohibited skin-to-skin contact, and 5.3% prohibit rooming-in; 20.1%. The hospital's infection prevention and control practices run counter to evidence-based care to support breastfeeding.

In addition, the problem that breastfeeding mothers face with COVID-19 after returning home is the reduced access to breastfeeding support groups or communities and lactation counseling both because resources have been diverted to other places and because of concerns for mothers and families regarding the transmission of COVID-19 through breast milk (Centers for Disease Control and Prevention (CDC), 2020).

This study is to review previous research that describes the practice of protection and social support of exclusive breastfeeding in mothers with COVID-19 as a message for health promotion in protecting breastfeeding practices and preventing the transmission of COVID-19 between mothers and babies.

2. METHOD

2.1 Search Strategy

This review uses a systematic review approach which is carried out based on the Preferred Reporting Item Guide for Systematic Reviews and Meta-analysis (PRISMA). A systematic search was carried out in March-June 2021 and was carried out in several databases such as Scopus and Pubmed with a deadline of 2020-2021. The search strategy uses subject titles and keywords and uses only English. The search strategy included the following terms: “Exclusive Breastfeeding” AND “COVID-19” OR “SARS-CoV-2”.

The inclusion criteria consisted of articles reporting breastfeeding practices to mothers infected with COVID-19, describing breastfeeding protection and support practices, open access, full-text papers from 2020-2021, the type of article was Original Research with qualitative and quantitative methods in all designs. research, and in English. While the exclusion criteria are case reports, case series, reviews, conference reports, no result data, and not original articles, cannot be accessed, focus on discussing coronavirus detection in breast milk, breast milk content, and breastfeeding studies not on mothers infected with COVID-19 . Articles that did not meet these criteria were excluded from the study.

2.2 Selection Study

Based on the results of searches conducted in three databases, namely Scopus and Pubmed, a total of 462 articles were

obtained which then entered the elimination stage, resulting in 16 articles which were subsequently included in the results of this review (Figure 1).

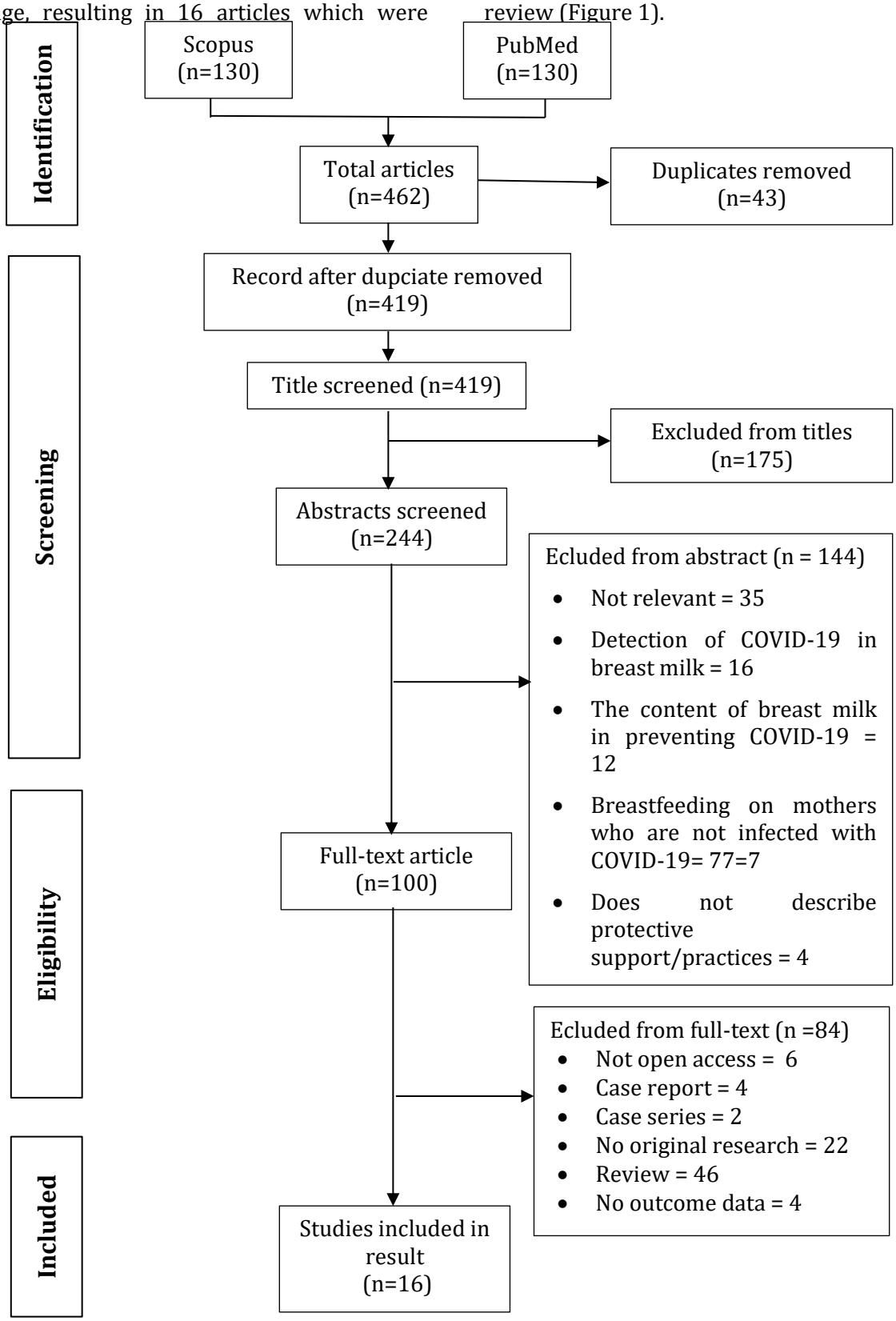

Figure 1PRISMA Flowchar

2.3 Data Exctraction

The research that has been selected based on the inclusion criteria is then summarized into a table based on the name of the researcher and the year of publication of the journal, country, method and design, sample, data source, results and message. These journals were reviewed based on abstracts and full-texts to be described further in search of similarities and differences in each study. and the last step is to draw conclusions from the research. The first author will carry out the selection process with a test and re-test approach which aims to verify the selection process. Then, the second author (supervisor) will independently select a random sample from the search results and compare the first author's findings. By performing this technique, the consistency of the inclusion and exclusion criteria can be tested and verified.

2.4 Quality of Studies

The Newcastle-Ottawa Scale (NOS) was used to rate the study's quality, with each numbered item in the Selection and Exposure category receiving a star. For the Comparability category, a maximum of two stars can be granted.

3. RESULT

Based on searches of two electronic databases, 462 articles, 332 articles from Scopus and 332 articles from PubMed. All articles were filtered to 419 articles after removing 43 duplicate articles. After filtering by reading the title of the article, 175 articles.

The screening was continued by reading 244 abstracts, then 143 were issued because they discussed breastfeeding practices for mothers who were not infected with COVID-19, the article did not contain information about protection or support practices, the article reviewed the detection of COVID-19 in breast milk and the content in breast milk and several other articles were considered irrelevant. (Breast milk bank, formula milk promotion strategy and so on). After screening by reading all 100 articles, 16 articles were obtained that were relevant to the inclusion criteria.

Table 1 shows a systematic literature review of exclusive breastfeeding social support for mothers infected with COVID-19. We identified 16 studies reporting 1865 maternal cases with COVID-19. These studies provide an overview of protective breastfeeding practices for mothers with COVID-19, social support from health workers, families, and health care management.

There are 10 studies (Biasucci et al., 2020; Cojocaru et al., 2020; García et al., 2021; Kalamdani et al., 2020; Patil et al., 2020; Popofsky et al., 2020; Ronchi et al., 2021; Salvatore et al., 2020; Sánchez-Luna et al., 2021; Tran et al., 2021) describing mothers with COVID-19 successfully maintaining the practice of breastfeeding by making skin contact and being cared for in a room with their baby.

The study by Wang et al., (2020), described the mean duration of mother-infant separation as 35 days (interquartile range 16-52 days). After the maternal quarantine was lifted, 49.1% of mothers preferred to keep their children separated from their mothers. Breastfeeding rates were only 8.8% at 1 week after birth, 19.3% at 1 month, and 36.8% at 3 months.

The success of breastfeeding by ensuring the transmission of COVID-19 from mother to baby is strongly supported by the implementation of strict health protocols. Case study by Tran et al (6), describes health workers providing breastfeeding support directing mothers to implement protocols such as wearing a mask when carrying, changing masks every 4-6 hours, washing hands before and after caring for their babies, babies are periodically placed in a second bed, 2 m apart.

In addition, 7 studies (Cojocaru et al., 2020; García et al., 2021; Marín Gabriel et al., 2020; Patil et al., 2020; Ronchi et al., 2021; Salvatore et al., 2020; Shlomai et al., 2021) described the protective practice of exclusive breastfeeding in mothers with COVID-19 where no infant died, and there was no vertical transmission during hospitalization and skin contact.. Salvatore et al., (2020) stated that 150 of the 185 mothers infected with COVID-19 were placed in one room. 143 babies who were in the same room had a negative test result and continued to be breastfed according to the health protocol.

Support from health workers and

hospital management can help protect breastfeeding practices in mothers with COVID-19 and prevent transmission. The study by García et al., (2021) illustrated that hospital management avoids the practice of separating mother and child in an inpatient setting to protect breastfeeding practices.

In contrast to research Gonçalves-Ferri et al., (2021) described that some hospitals have not adopted UNICEF recommendations, this leads to a decrease in exclusive breastfeeding at discharge..

The study of Gonçalves-Ferri et al., (2021) described that most hospitals did not recommend skin contact (79.1%) and breastfeeding in the first hour after birth (87.5%). This affects the practice of breastfeeding after at home. This is exacerbated by the lack of a health community in the home environment (83.3%) so that access to education related to breastfeeding is limited.

Family support is also a form of social support for breastfeeding. The study of Oncel et al., (2021) showed that most newborns (n: 108, 86.4%) of COVID-19 mothers were cared for by family members in separate rooms (n: 6, 4.8%). Formula milk (n: 71, 56.8%) or expressed breast milk (n: 45, 36%) were provided to the majority of infants who were treated separately, which was higher than the use of exclusive breastfeeding (n: 9, 7.2 %).

Table 1 Systematic Literature Review Exclusive Breastfeeding Social Support for Mothers Infected with COVID-19

Author, Years	Data source	Result	Message
Tran et al, 2021(Tran et al., 2021)	Primary (through interviews and observations)	Health workers direct the mother to apply health protocols such as wearing a mask when carrying, changing the mask every 4-6 hours, washing her hands before and after caring for her baby, the baby is periodically placed in a second bed, 2 m apart, cleaning the breasts with soap. Skin-to-skin contact after cesarean section, hospitalization, lactation support can improve the practice of early and exclusive breastfeeding on discharge and up to 6 months and the baby's condition is healthy.	The need for support from health workers in ensuring the implementation of health protocols for mothers such as using masks, maintaining distance, skin contact, joining and lactation support. This practice can prevent babies from contracting COVID-19 and breastfeeding continues.
Luna et al, 2021 (Sánchez-Luna et al., 2021)	Secondary (the nationwide registry of the Spanish Society of Neonatology.)	Nearly half of the infants were left in skin-to-skin contact after delivery, and 62.3% of the asymptomatic infants were treated with hospitalization with the mother. Breast milk is accepted by 76.5% of infants, 204 of which are exclusive breastfeeding	Skin contact and breastfeeding may be recommended, but it is imperative to implement prevention and control measures, and monitor newborns who are at risk for COVID-19.
Popofsky et al, 2020 (Popofsky et al., 2020)	Secondary (medical record) and Primary (interview by phone)	Higher rates of breastfeeding were observed in non-separated couples compared with couples separated both in hospital (P < .001) and at home (P = 0.012) and higher rates of formula feeding among separated couples.	Health promotion needs to recommend lactation services and breastfeeding support for mothers with COVID-19 whether separated or not to help increase mothers' confidence to breastfeed so that exclusive breastfeeding plans do not change
Kalamdani et al, 2020 (Kalamdani et al., 2020)	Secondary (Case record in tertiary care hospital) and Primary (interview)	143 babies who were in the same room had a negative test result and continued to be breastfed according to the health protocol. 12 COVID-19 positive babies were placed in a room and all managed to exclusively breastfeed. Health workers encourage mothers to follow	The support of health workers is very important to ensure compliance with health protocols and successful breastfeeding in mothers infected with COVID-19.

Author, Years	Data source	Result	Message
		health protocols at all times, especially when breastfeeding.	
Oncel et al, 2020 (Oncel et al., 2021)	Primary (observations)	11 (88.8%) infants were monitored at a distance of 2 m from the mother or cared for by family members in a separate room (n: 6, 4.8%). Most infants who were treated separately were given formula milk (n: 71, 56.8%) or expressed breast milk (n: 45, 36%), higher than the use of exclusive breastfeeding (n: 9, 7.2%). All infants with COVID-19 (n: 4) were formula-fed.	Families tend to recommend formula because of anxiety and lack of information. This shows that family support policies must be part of maternal and infant care in cases of COVID-19.
Gabriel et al, 2020 (Marín Gabriel et al., 2020)	Secondary (the medical records) and Primary (in-depth interviews by phone)	Formula feeding was the dominant feeding choice at discharge (52.5%), and only 6 infants exclusively breastfed at discharge. The absence of skin contact, the practice of separating mother and baby. Mothers and health care workers are worried and afraid of contagion in the decision.	Health care worker support is critical to keeping mother and child together, where clinically possible, and promoting, proper breastfeeding support during their hospital stay and when they are discharged
Salvatore et al, 2020 (Salvatore et al., 2020)	Secondary (*medical record*)	68 (83%) share a room with mother. All mothers were allowed to breastfeed; 72 (88%) infants were also tested at 14 days of life and none were positive. None of the neonates had any symptoms of COVID-19. 62 (85%) out of 73 parents use masks and practice hand hygiene properly.	Good health protocols and breastfeeding services with safe procedures can prevent transmission and continue breastfeeding. This also needs to be informed to the family.
Ferri et al, 2021 (Gonçalves-Ferri et al., 2021)	Primary (Questionnaire)	The rate of non-recommended skin-to-skin contact (79.1%) and breastfeeding in the first hour after birth (87.5%). Lack of community health in the home environment (83.3%). so that access to education related to breastfeeding is limited	Health promotion strategies need to reach out to community support in the community regarding breastfeeding to ensure mothers with COVID-19 continue to breastfeed after returning home.
Rio et al, 2020 (Río et al., 2021)	Primary (observations)	108 (43.5%) received no direct skin contact after birth, 114 infants (45.9%) were separated from their mothers. A strong positive correlation was observed in the percentage of newborns who received exclusive breastfeeding at discharge and infants who received direct skin contact after birth (r = 0.828)	The advocacy strategy is useful for implementing breastfeeding guidelines for mothers with COVID-19 in hospitals based on an assessment of the hospital's capacity in lactation services for mothers with COVID-19.
Garcia et al, 2021 (García et al., 2021)	Primary (observations and Interview by phone)	Skin-to-skin contact was performed in 51 (68%), exclusive breastfeeding for 48 infants (64%), combined mother and donor breast milk in 12 (16%), mixed breastfeeding for 7 (9.3%) and formula milk for 8 (10.7%). There are no cases of vertical infection, hospital management avoids separation of mother and child with inpatient settings.	skin to skin and separation are based on the importance of breastfeeding and the low evidence of risk of transmission and the low level of documented case severity.
Ronchi et al, 2021 (Ronchi et al., 2021)	Primary	The risk of mother-to-child transmission of SARS-CoV-2 during a room stay seems unlikely, provided the mother is educated to adhere to health	Mothers infected with SARS-CoV-2 in good clinical condition should be encouraged to practice hospitalization and breastfeeding

Author, Years	Data source	Result	Message
		protocols. 95% of the registered babies were successfully breastfed	according to health protocols.
Cojocaru et al, 2020 (Cojocaru et al., 2020)	Primary	26 (84%) mothers with COVID-19, 17 (65%) chose to be hospitalized, 16 (61%) breastfed (11 direct breastfeeding and five expressed breast milk) . All neonatal tests for SARS-CoV-2 were negative. Health workers give preventive instructions to avoid spreading the virus to babies during breastfeeding, skin contact and hospitalization.	It is important to note that strict isolation precautions do not completely prevent neonatal infection. We can't get over the infection rate once it's out. Health promotion also needs to pay attention to counseling to families and mothers regarding protocol compliance.
Shlomai, et al (Shlomai et al., 2021)	Primary (Observation and Interview by telephone)	All infants tested negative postpartum. 74.5% of infants were given expressed breast milk. 89% of infants were discharged from hospital. As many as 85% of newborns are breastfed after discharge from the hospital. Health workers notify mothers and families regarding protection during breastfeeding (hand hygiene and masks), baby care after the mother returns home.	Education to families can support family knowledge to contribute to providing support in the implementation of breastfeeding behavior accompanied by protocols for preventing transmission of COVID-19 at home.
Biasucci et al, 2020 (Biasucci et al., 2020)	Primary	All infants were uninfected at birth, 13 of 15 remained negative; 2 positive babies became negative on day 14 of life. All asymptomatic. All infants were allowed for skin contact, permanent hospitalization, and direct breastfeeding with strict preventive protocols	COVID-19 mothers have to undergo a very stressful quarantine period, bonding, rooming-in, and breastfeeding will also help reduce their psychological burden with monitored health protocols.
Wang et al, 2020 (Wang et al., 2020)	Secondary (Medical record) and Primary (Follow Up Survey)	The average duration of mother-infant separation was 35 days. Breastfeeding rates were only 8.8% at 1 week after birth, 19.3% at 1 month, and 36.8% at 3 months. A significant negative relationship was identified ($p < 0.05$) between the day of mother-infant separation and three domains of postpartum maternal psychological development: communication, gross motor, and personal. -social.	It is necessary to promote health education, guidance and monitoring of maternal mental health, breastfeeding, and parenting behavior among pregnant women and their families, if necessary, timely referral to a psychiatrist or pediatrician for further intervention.
Patil et al, 2020 (Patil et al., 2020)	Secondary (Medical Record)	A total of 33 (73%) newborns lived with their mothers and 31 of 33 (94%) were breastfed with initiation of breastfeeding within 1 hour after birth. No adverse short-term neonatal outcomes with skin-to-skin care, hospitalization, or breastfeeding in infants of SARS-CoV-2 positive mothers	The practice of hospitalization and breastfeeding is an educational opportunity for mothers about preventive measures, safe distance, use of personal protective equipment, and safe breastfeeding or pumping of breast milk

4. DISCUSSION

Based on the results of this study, it appears that breastfeeding practices continue and there is no transmission of COVID-19 from mother to baby. This practice is supported by the implementation of health protocols such as using masks, proper hand hygiene practices, babies are periodically placed in a second bed, 2 m apart, mothers regularly clean their breasts and hands with soap (Tran et al., 2021). It seems that the transmission of COVID-19 does not occur if proper and strict hygiene precautions and breastfeeding services are carried out in safe

procedures (Salvatore et al., 2020).

Mother-infant separation is an issue that needs great attention during the COVID-19 pandemic (Ronchi et al., 2021). Mothers infected with COVID-19 who fail to exclusively breastfeed mostly have a history of practicing separation after birth (Wang et al., 2020). Even though the condition of mothers infected with COVID-19 must undergo a very stressful quarantine period so that skin contact, rooming-in, and breastfeeding will actually help reduce their psychological burden (Biasucci et al., 2020). It is therefore necessary to promote health education related to breastfeeding, and monitoring of maternal mental health through lactation and counseling services as well as enforcement of strict health protocols.

Based on the 5 studies (Cojocaru et al., 2020; García et al., 2021; Kalamdani et al., 2020; Shlomai et al., 2021; Tran et al., 2021) in this review it can be concluded that the practice of hospitalization and prohibiting separation basically takes into account the importance of breastfeeding and the known benefits of the practice together with the low evidence of transmission risk and low risk of infection. documented case severity (García et al., 2021). This requires the support of health workers in providing information on preventing the spread of the virus to infants during breastfeeding, skin contact and hospitalization and not directly offering formula milk without relactation and checking the health of the mother (Cojocaru et al., 2020). Therefore, an important message for future health promotion practices must pay attention to the support of health workers in providing these services as well as advising and encouraging mothers to continue breastfeeding and monitoring the implementation of health protocols.

The description of government policy support regarding recommendations for breastfeeding practices for mothers with COVID-19 is still rarely found in research. However, this can be seen from the lack of application of breastfeeding protection practices in some hospitals (Río et al., 2021). Whereas hospital management support in providing services can be the basis for health workers to provide support (Río et al., 2021). Health promotion needs to approach or advocate to the government regarding instructions for implementing breastfeeding guidelines for mothers with COVID-19 in hospitals based on an assessment of hospital capacity in lactation services for mothers with COVID-19. The guidelines should also ensure that there is family support for the success of the practice.

Social support for breastfeeding also comes from peers, health cadres, neighbors or breastfeeding support groups in the community (Fadjriah R.N., 2020). The lack of a health community in the home environment is a challenge for mothers with COVID-19 to breastfeed after returning home due to limited access to education related to breastfeeding(Gonçalves-Ferri et al., 2021). Therefore, health promotion practices also need to reach out to various communities in the community regarding breastfeeding to ensure that mothers with COVID-19 continue to breastfeed after returning home.

Protecting breastfeeding practices and preventing the transmission of COVID-19, cannot ignore family support. Oncel et al., (2021) explained that families tend to recommend formula milk because of anxiety and lack of information. In another study, mothers with COVID-19 managed to continue breastfeeding at home. Health workers not only give instructions to mothers but also to families regarding prevention for hand hygiene, protective measures while breastfeeding (hand hygiene and masks), and baby care after the mother returns home (Shlomai et al., 2021). This shows that family support policies must be part of health promotion practices during the pandemic for maternal and infant care in cases of COVID-19.

A limitation of this systematic review is that it did not examine the relationship between social support and exclusive breastfeeding. In addition, considerable heterogeneity was observed across studies, which did not allow us to perform a meta-analysis. On the other hand, we cannot guarantee that we can identify all breastfeeding practices in all mothers with COVID-19. There may be additional cases currently presented in other types of publications, such as reports.

5. CONCLUSION

Mothers with COVID-19 managed to breastfeed exclusively by depicting rooming-in and skin-to-skin contact after delivery. Breastfeeding practices do not appear to transmit COVID-19 from mother to baby.

However, this practice must be accompanied by strict health protocols and close monitoring of health workers. The support of health workers, families, hospital management, and communities in the community is very important to support the success of exclusive breastfeeding and ensure that the implementation of health protocols to prevent COVID-19 is still adhered.

6. ACKNOWLEDGEMENT

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