İSTANBUL UNIVERSITY PRESS

Çocuk Dergisi - Journal of Child 2024;24(2):92-98
DOI: 10.26650/jchild.2024.1322076

RESEARCH ARTICLE

Effect of the COVID-19 Pandemic on Mothers' Breastfeeding Status

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Citation: Ünsal A., Kuzlu Ayyıldız T. Effect of the COVID-19 pandemic on mothers' breastfeeding status. Çocuk Dergisi - Journal of Child 2024;24(2):92-98. https://doi.org/10.26650/jchild.2024.1322076

ABSTRACT

Objective: This study was conducted descriptively to evaluate the impact of the COVID-19 pandemic on the breastfeeding status of mothers with infants aged 0-24 months.

Methods: The study was conducted at the Ankara City Hospital in the breastfeeding support/relactation clinic and mother-infant bonding service between December 2021 and May 2022. A sample of 511 mothers who applied to the clinics mentioned during the study period, agreed to participate in the research, and met the research criteria was formed. Research data were collected using a Descriptive Data Form.

Results: The average age of the mothers was 28±4.7 (18-44), and 51.66% had a caesarian delivery. Approximately 54.41% of the mothers were university graduates. During the pandemic, it was determined that 13.0% of the mothers experienced breastfeeding-related problems, and all mothers who experienced problems hesitated to go to the hospital. It was found that 12.14% of the mothers had COVID-19 during pregnancy, and 69.70% of the mothers who had COVID-19 did not continue to breastfeed. The rate of mothers who stated that they did not receive any information about breastfeeding during the COVID-19 period was 57.6%, and the rate of mothers who had breastfeeding problems after quarantine was 17.50%. During their hospital stay due to COVID-19, it was determined that 48.7% of the mothers breastfed their babies, 41.0% fed expressed breast milk and formula,and 10.3% fed only formula.

Conclusions: It was observed that mothers needed breastfeeding counselling during the pandemic.

Keywords: Pandemic, breastfeeding, breastmilk

INTRODUCTION

The coronavirus infection (SARS-CoV-2) that started in Wuhan, China, in December 2019 has rapidly spread and caused infections in countries around the world. By the end of January, with the spread of COVID-19 to 19 countries, the World Health Organisation (WHO) declared it a "Public Health Emergency of International Concern." Because of the millions of deaths caused by COVID-19 worldwide, it was declared a pandemic in March 2020 (1).

As COVID-19 spread worldwide, countries prevented the spread of the infection through measures such as maintaining social distance and personal isolation at home. Flexibilities in public and private sector work arrangements, such as staggered shifts and remote work, were introduced. Schools switched to distance learning, and meetings and events were cancelled. These measures have changed the daily flow of individual and societal life and have affected all members of society in various ways (1-3).

the COVID-19 pandemic has also affected the breastfeeding process of mothers, just as it has affected every aspect of life. Studies have reported no transmission of the virus through breastfeeding. However, the spread and alarming level of this infection has caused fear and panic among mothers. Mothers have been unable to attend prenatal classes, receive breastfeeding education, or even seek healthcare facilities for their breastfeeding difficulties after childbirth (4-8).

Policies regarding breastfeeding after SARS-CoV-2 infection have varied among pregnant women. The World Health Organisation (WHO) recommended breastfeeding during the SARS-CoV-2 infection outbreak. It emphasised that breastfeeding mothers wearing masks and paying attention to breast hygiene before breastfeeding and hand washing before and after touching the baby would be sufficient (9). Studies have not found the COVID-19 virus in amniotic fluid, cord blood, placenta, or breast milk (7,10,11). The SARSCoV-2 virus is transmitted through close contact between individuals and droplets. It can also be transmitted through the enteral route, conjunctival mucosa, or

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Submitted: 17.07.2023 • **Revision Requested:** 09.01.2024 • **Last Revision Received:** 10.01.2024 • **Accepted:** 11.01.2024

contaminated surfaces (12). Therefore, transmission through droplets between the mother and baby should be carefully considered. However, because of the novelty of the infection, there is limited research on this topic (13).

Although it has been published in the literature that the SARS-CoV-2 virus does not pass through breast milk, it is known that the risk of transmission through contact and droplet infection, as well as the restrictions imposed in social life and anxieties, have affected the breastfeeding period. Therefore, this study was conducted as a descriptive study to evaluate the effects of the COVID-19 pandemic on the breastfeeding status of mothers with infants aged 0-24 months.

METHODS AND PROCEDURES

Study Type
The study was conducted as a descriptive research.

The Research Question
Has breastfeeding of mothers' babies been negatively affected during the COVID-19 pandemic?

Location and Time of the Study
The research was conducted at Ankara City Hospital in the Maternal Support Breastfeeding/Relactation Polyclinic (Breastfeeding/Relactation Support Clinic) and the Mother-Baby Bonding Unit between December 2021 and May 2022.

Population and Sample
The study population consisted of a total of 4.498 mothers who applied to Ankara City Hospital Mother Support Breastfeeding/ Relaxation Polyclinic (2.102) and Mother-Baby Bonding Unit (2.396) between January and December 2020. The required sample size was calculated to be a minimum of 380 using a formula commonly used when the population is known. A sample of 511 mothers with children aged 0-24 months, who applied to the specified clinics during the study period, agreed to participate in the research, and met the research criteria was included in the study.

Inclusion Criteria:

- Mothers with children aged 0-24 months,
- Proficient in Turkish
- No communication problems
- Mothers who agreed to participate in the study.

Data Collection Tools Descriptive Data Form
The form prepared by the researchers consists of 48 questions, following the literature. The form includes four questions related to the sociodemographic characteristics of the mothers, eight questions related to the birth characteristics of the mother and the baby, 17 questions related to the mothers' breastfeeding status during pregnancy and after childbirth, seven questions related to the mothers' knowledge about infant feeding, and 12 questions related to the examination of the mothers' characteristics regarding breastfeeding and feeding their babies during the COVID-19 pandemic.

Implementation of the Research
The research data were collected by the researcher either through face-to-face interviews or using the Google Forms survey tool, based on the mothers' preferences. The approximate time to complete the survey form was 10-15 minutes.

Ethical Considerations of the Research
Written permission was obtained from the Zonguldak Bülent Ecevit University Human Research Ethics Committee (25.11.2021/105435) and the Ankara Provincial Health Directorate to conduct the research. Before starting the study, the participants were provided with information about the purpose and research plan, and their consent was obtained. The names of the participants were not used. At the beginning of the Google Forms survey, a voluntary consent form was included. After providing their consent on the form, participants proceeded to answer the survey questions.

Data Analysis
SPSS 16.0 software was used for data analysis. For the analysis of the data obtained in the study, frequencies and percentages were used for categorical variables. Descriptive statistics such as minimum and maximum scores, mean, standard deviation, and median values were used to identify continuous variables.

Limitations and Challenges Encountered in this Research
The results obtained from this study are limited to the time in which the study was conducted and the responses provided by the participants to the data collection tools used in the study.

RESULTS

The mean age of the participating mothers was found to be 28.34±4.72 years, with a range of 18.00-44.00. The average gestational age of the infants was 38.96±3.42 weeks, with a range of 32.00-42.00. It was determined that mothers breastfed their infants until an average age of 12.22±3.81 months, with a range of 0.00-24.00 months. When examining the educational status of the mothers, it was found that 30.33% (n=155) had completed high school education and 54.41% (n=278) had completed university education (Table 1).

Table 1: Distribution of maternal and infant socio-demographic characteristics (n=511)

Characteristic	Mean±SD Median (Min-Max)	
Mother's age	28.34±4.72 27.00 (18.00-44.00)	
Gestational age	38.96±3.42 38.00 (32.00-42.00)	
Postpartum age (in months)	12.22±3.81 (00.00-24.00)	
Breastfeeding duration (in months)	16.44±4.62 (00.00-24.00)	
Mother's educational status	**n**	**%**
Literate	2	
Primary school	12	0.39
Middle school	64	2.35
High school	155	12.52 30.33
University	278	54.41
Total	**511**	**100.0**

Approximately 48.34% (n=247) of the mothers gave birth through spontaneous vaginal birth, and

72.02% (n=368) gave birth at a state hospital. Among the mothers who had a caesarian section, 20.71% (n=54) stated that their first childbirth was also a caesarian section, 12.85% (n=34) chose caesarian section due to pelvic constriction, and 15.47% (n=41) chose caesarian section due to health problems (Table 2).

During the pandemic, 13.0% (n=66) of the mothers experienced breastfeeding-related problems, and all of these mothers hesitated to go to the hospital. Among the 66 mothers who expressed hesitation, 82.9% (n=54) stated that they hesitated to go to the hospital because of the fear of contracting COVID-19 (Table 3).

It has been determined that most mothers (87.86% (n=423)) do not contract COVID-19 disease. In addition, 76.13% (n=66) of the participants stated that they had contracted COVID19 after childbirth. During the COVID-19 period, 79.54% (n=70) of the participating mothers reported that they were not hospitalised, while 20.46% (n=18) stated that they were hospitalised (Table 4).

Among the mothers who had COVID-19 after childbirth, 30.30% (n=20) continued to breastfeed. Among the mothers who continued breastfeeding, 71.21% (n=47) stated that they did not feel anxious while breastfeeding, whereas 28.79% (n=19) expressed anxiety. When asked about the duration of not being able to breastfeed due to COVID-19 infection, 22.72% (n=15) stated 14 days, 10.61% (n=7) stated 15 days, 3.03% (n=2) stated 20 days, and 1.52% (n=1) stated 21 days. It was determined that 42.4% (n=28) of the mothers sought information on how breastfeeding should be done during COVID-19, and among those who sought information, 86.5% (n=32) received it from healthcare professionals, 5.41% (n=2) from the internet, and 5.41% (n=2) from social media (Table 4).

After the quarantine period, 82.50% (n=33) of the mothers reported no problems related to breastfeeding, whereas

Table 2: Distribution of birth-related characteristics of mother and baby (n=511)

Characteristic		n	%
The type of birth	Spontaneous vaginal birth Caesarian section	247 264	48.34 51.66
Place of birth	At home Public hospital Private hospital University hospital	1 368 127 15	0.20 72.02 24.85 2.93
Reason for caesarian Delivery (n=264)	Recurrent caesarian section Mother's health problems Pelvic stenosis Inverted position Foetal bradycardia Decreased amniotic fluid Makrozomi Before preeclampsia Multiple pregnancy Cordent tanglement Early birth Intrauterine growth restriction	54 41 34 32 23 16 23 13 9 8 8 3	20.71 15.47 12.85 12.07 8.57 5.86 857 4.97 3.5 3.12 3.12 1.17

Table 3: Distribution of mothers' characteristics during the COVID-19 pandemic period (n=511)

Characteristic		n	%
Having problems with breast feeding	Yes No	66 445	13.0 87.0
Do not hesitate to go to the hospital (n=66)*	Yes No	66 0	13.0 0.0
If yes, why	Due to fear, COVID-19 transmission Because of the crowd Due to curfew	54 6 6	82.9 8.55 8.55
Presence of COVID-19 disease	I didn't pass I spent	423 88	87.86 12.14
COVID-19 time to get sick (n=88)	Post-natal During pregnancy	66 22	76.13 23.87
COVID-19 hospital treatment (n=88)	Yes No	18 70	20.46 79.54

17.50% (n=7) reported experiencing problems. When asked about the problems, they mentioned the baby being hospitalised due to a COVID-19 infection, a decrease in the mother's milk supply leading to the baby not latching, and the baby getting used to bottle feeding in the hospital and refusing to breastfeed (Table 4).

48.7% (n=19) of the mothers breastfed their babies, and 41.0% (n=16) fed them with expressed breast milk and formula. While feeding their babies, 52.8% (n=19) of the mothers used a

Syringe, 22.2% (n=8) used a bottle, and 16.7% (n=6) used a spoon (Table 4).

Table 4: Distribution of mothers' characteristics of breastfeeding their babies during the COVID-19 pandemic period (n=66)

Characteristic		n	%
Breastfeeding during COVID-19 disease	Yes No	20 46	30.30 69.70
Anxiety during breastfeeding	Yes No	20 46	30.30 69.70
Duration of not breastfeeding during COVID-19 disease	1 day 6 days 14 days 15 days 20 days 21 days	10 12 14 7 2 1	15.15 18.18 22.72 10.61 3.03 1.51
Breastfeeding information during	Yes No	28 38	42.4 57.6
Where is the information obtained?	Health workers TV Internet Social media	32 1 2 2	86.5 2.7 5.41 5.41
Having trouble breastfeeding after quarantine	Yes No	33 7	82.5 17.5
If yes, the problem	My baby was hospitalised due to COVID-19 My baby was also in intensive care, my milk decreased, he started not to breastfeed Refused the breast	2 2 3	28.67 28.67 42.66
Baby's diet*	Breast-feeding Formula Breastmilk+formula	19 4 16	48.7 10.3 41.0

*Mothers gave more than one answer

DISCUSSION

It is a well-known fact that breastfeeding has many benefits for both the other and the baby's health, and economically. Therefore, breast milk is considered the ideal food for babies, ranking first. The most suitable way to obtain and maintain breast milk is through breastfeeding. Breastfeeding is a feeding method that promotes the healthy physical and psychological development of babies. WHO has emphasised the importance of exclusive breastfeeding for the first six months of a baby's life to ensure their healthy growth and development (14,15).

Despite the known benefits of breast milk, uncertainties during the pandemic can cause mothers to experience different concerns. During the pandemic, the transmission routes of the SARS-CoV-2 virus,the uncertainty surrounding breastfeeding, and the disruption of breastfeeding counselling, health education, and healthcare services are believed to have contributed to the problematic completion of this process for mothers (16).

SARS-CoV-2 infection becomes more critical during sensitive periods of women's lives, such as pregnancy, childbirth, and the postpartum period. It was determined that 87.86% of mothers did not have COVID-19. Among 88 mothers who had COVID-19, 76.13% were infected after childbirth and 23.87% were infected during pregnancy. In a study examining the anxiety and depression caused by COVID-19 in pregnant women, 137 pregnant women were examined, and 44.5% of them tested positive for COVID-19 (17). The low rate of COVID-19 infection among mothers in the study is thought to be due to their concerns about protecting their own and their babies' health during the pandemic, which may have led them to comply with lockdown measures, hygiene, and distancing rules.

The study found that 20.45% of mothers with COVID-19 were hospitalised. In a study by Pereira et al. (2020) conducted on 22 mothers, 11 of them (50%) were symptomatic, and four of all patients received COVID-19 treatment before delivery, whereas four received treatment in the post partum period(18). In another study conducted in Turkey, it was reported that 8.2% of pregnant women diagnosed with COVID-19 received

hospital treatment, whereas 91.8% received home treatment (17). Pregnancy is a physiological condition that makes women more susceptible to respiratory complications from viral infections. The physiological changes in the immune and cardiopulmonary systems of pregnant women increase the risk of developing more severe diseases if they become infected with respiratory viruses. In a study that examined 1918 cases during the influenza pandemic, the mortality rate was reported as 26% in the general population, whereas it was 37% among pregnant women (19). Although studies are still ongoing, there is currently no specific treatment proven to be effective and reliable for COVID-19 infection (20,21,22).

The study found that 69.70% of mothers who had COVID-19 after pregnancy did not continue to breastfeed. The management of breastfeeding varied at the beginning of the COVID-19 pandemic. While there are publications supporting breastfeeding during the COVID-19 pandemic (23,24), there are also publications suggesting not breastfeeding during this period (25,26). As COVID-19 continued, new and updated opinions were formed by investigating the management and transmission routes of the disease. Initially, the prevailing views endorsed the separation of the mother and baby during the breastfeeding period, but later it was recommended to support breastfeeding (27,28).The transmission routes of SARSCoV-2 in infected newborns have been investigated, but no study has shown that breastfeeding (29-31). It is believed that the differences in breastfeeding during the pandemic may be due to the uncertainty of this period and the fact that COVID-19 is a newly discovered virus. Among mothers who continued breastfeeding during the quarantine period, 28.79% expressed anxiety while breastfeeding. The pandemic has caused parental anxiety regarding breastfeeding and breast milk (32,33). Pregnancy and the postpartum period are emotionally sensitive times characterised by intense emotions. Pregnant and postpartum women experience greater anxiety during the pandemic because they are concerned not only about their own health but also about the health of their infants, whom they are responsible for nurturing, breastfeeding, and protecting (34). Studies have indicated an increased likelihood of depressive symptoms and anxiety in women during pregnancy and the postpartum period during COVID-19 (35,36). The rapid progression of the COVID-19 pandemic has led to uncertainties in pregnancy and breastfeeding. this uncertainty may be the reason for the anxiety experienced by breastfeeding mothers. In a study conducted during the COVID-19 pandemic, it was observed that 13.0% of mothers encountered problems related to breastfeeding, and all mothers experiencing problems hesitated to go to the hospital. Among mothers expressing hesitation, 82.90% stated that they were reluctant to go to the hospital because of concerns about contracting COVID-19. Similarly, studies have found that individuals hesitated to enter healthcare facilities and postponed hospital appointments during the COVID-19 pandemic (37-42). In a study by Nazik et al. (2020) that evaluated the impact of the COVID-19 pandemic on prenatal care services received by pregnant women, it was found that women received fewer prenatal care services compared with the pre-pandemic period, with more than half of the pregnant women receiving fewer than four prenatal care visits during their pregnancies (38). Yildiz et al. (2021) conducted a retrospective cross-sectional study and found that women made fewer prenatal visits in 2020, during the ongoing pandemic, compared with 2018 and 2019 (39). Wu et al. (2020) found that women feared hospital visits during the pandemic, and more than half of the women cancelled or postponed their hospital appointments (40). Lockdown measures during the pandemic and people's fear of contracting the disease have disrupted routine healthcare cheque-ups.

After the quarantine period, 82.50% of mothers reported not having any problems related to breastfeeding, whereas 17.50% reported experiencing problems. The identified problem incl udedthebabybeinghospitalizedduetoaSARS-CoV-2infection,a decrease in the mother's milk supply, resulting in the baby not latching or refusing to breastfeed. Although there is no evidence of breastfeeding transmission of SARS-CoV-2 (7), the evidence regarding the safety of breastfeeding in infants of suspected or confirmed COVID-19 mothers is limited because of horizontal transmission. In addition, breastfeeding is not recommended for mothers undergoing ongoing treatment because it is yet unknown whether antiviral drugs pass into breast milk (20). It has been reported that if a subsequent COVID-19 test of suspected or confirmed COVID-19 mothers yields a negative result, the infants can be breastfed (26). Problems such as a decrease in the mother's milk supply and the baby not latching or refusing to breastfeed may have occurred due to the interruption of breastfeeding in infants of suspected or confirmed COVID-19 mothers.

CONCLUSION-SUGGESTIONS

Continuing the breastfeeding process, which is vital for the baby, should not be interrupted during the COVID-19 pandemic that has affected the entire world. The newborn should continue to receive breast milk in the most effective way by following all hygiene rules specified during the COVID-19 period.

Health professionals, especially healthcare professionals, should provide detailed information and support to mothers about breastfeeding their babies and ensure the continuation of breastfeeding during the pandemic.

Women should be supported with evidence-based practises and their confidence should not be undermined in making decisions for themselves and their babies. Safe information regarding the COVID-19 pandemic should be provided to mothers and expectant mothers through evidence-based practises, official guidelines, and national and international recommendations. Especially during the pandemic, midwives should advocate natural childbirth for women. It is recommended to plan advanced scientific research in this regard.

Ethics Committee Approval: Zonguldak Bulent Ecevit University (BEU) Human Research Ethics Committee (25.11.2021/105435).

Informed Consent: Written consent was obtained from the participants.

Peer Review: Externally peer-reviewed.

Conflict of Interest: Authors declared no conflict of interest.

Financial Disclosure: Authors declared no financial support.

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