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# Mother's Behavior in Breastfeeding after the Covid-19 Pandemic: a Cross Sectional Study

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#### **ABSTRACT**

**Background:** Research related to the implementation of breastfeeding guidelines after the COVID-19 pandemic in healthy breastfeeding mothers is still minimal, even though the mother's behavior in implementing breastfeeding guidelines correctly can ensure the safety of breastfeeding.

**Purpose:** This study aims describe the behavior of mothers in breastfeeding during and after COVID-19 pandemic.

**Methods:** This study used a cross-sectional design. The sample in this study were breastfeeding mothers who had babies aged less than 6 months who met the inclusion criteria and obtained a total of 94 respondents. The research instrument used a questionnaire. Mother's behavior in breastfeeding is categorized into good, moderate and sufficient categories. Data analysis used the wilcoxon signed ranks test to compare behavior during and after the COVID-19 pandemic.

**Results:** During the pandemic, the behavior of mothers in the moderate category was more than the good or sufficient category, which was 42.6%. Meanwhile, after the pandemic, there was no maternal behavior in the sufficient category, while the good category was more than the moderate category, which was 71.3%. The Wilcoxon Rank Test results obtained p-value=0.000, there was a significant difference between the behavior of mothers in breastfeeding during and after the COVID-19 pandemic.

**Conclusion:** The covid-19 pandemic period for breastfeeding mothers is an external stimulus, it is hoped that mothers can make changes to the right breastfeeding pattern in accordance with health protocols as an effort to control and prevent the spread of covid-19 during the breastfeeding process, because the benefits of breastfeeding far exceed the potential for COVID-19 transmission.

**Keywords:** after the pandemic, behavior, breastfeeding mothers, covid-19, during the pandemic

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#### **BACKGROUND**

The spread of the SARS-CoV-2 corona virus as a pandemic was declared by the World Health Organization (WHO) on March 11, 2020. (Ghebreyesus, 2020) During the COVID-19 pandemic, breast milk (ASI) must still be given to infants on the grounds that breast milk is a source of good nutrition and can protect infants from infectious diseases. (Spatz & Froh, 2021) In fact, current evidence suggests that the corona virus is not transmitted through breast milk, the possible risks during the COVID-19 pandemic are less than the benefits of breastfeeding and even breastfeeding can protect infants and mothers. (Lubbe et al., 2020) This statement is in accordance with the recommendation of the WHO that breast milk be given to newborns up to the age of 6 months without other food or liquids, except vitamins, minerals, and drugs that have been permitted for medical reasons. (WHO, 2018) The situation of the Covid-19 pandemic It is hoped that what has happened in Indonesia will not scare mothers or stop breastfeeding. In fact, the government has taken various measures to stop the spread of the corona virus. One of the efforts to prevent the spread of Covid-19 is urging the public to maintain a physical distance of at least one meter from other people. However, this actually makes breastfeeding mothers afraid to breastfeed their babies.

The COVID-19 pandemic has also disrupted access to essential services such as breastfeeding counseling in hospitals, health clinics, and home visits by health workers as well as visits by nursing mothers at the Baby Love Hospital.(Hull et al., 2020) The reduced frequency of visits by postpartum and breastfeeding mothers to health services to gain access to examinations and education about breastfeeding, thus affecting the mindset and behavior of breastfeeding mothers during the COVID-19 pandemic. Several studies stated that most breastfeeding mothers felt that COVID-19 had a negative impact because of the need to stay at home (50.8%), not receiving visits from relatives (52.1%), the need to cancel attendance in support groups, (72.8%). %) unable to go to health facilities (70.6%), and excessive time to focus on breastfeeding.(Brown & Shenker, 2020)(Pacheco et al., 2021) This situation increases the interest of breastfeeding mothers in receiving information during breastfeeding.(Pacheco et al., 2021).

In Indonesia, the Integrated Service Post program which functions to provide services to mothers and toddlers is also experiencing obstacles. The results of a survey conducted by the Ministry of Health of 43% did not carry out face-to-face Integrated Service Post during the pandemic, but through telecounseling(Ministry of Health of the Republic of Indonesia, 2020) so that information related to breastfeeding and breastfeeding guidelines during the COVID-19 pandemic could still be provided. Providing correct information regarding breastfeeding during the COVID-19 pandemic is one of the responsibilities of health workers, including midwives. As research states that antenatal and postnatal support, including the provision of information to the mother positively affects the success of breastfeeding(Mcfadden et al., 2017; Rollins et al., 2016). In Kediri Regency, midwives continue to provide information about breastfeeding during the COVID-19 pandemic through WhatsApp.

Information related to breastfeeding guidelines during the Covid-19 pandemic, including always washing hands before and after breastfeeding, using masks, cleaning touched surfaces with disinfectant, applying coughing and sneezing etiquette (UNICEF, 2020) has been socialized by midwives to nursing mothers with the aim that mothers can breastfeed safely follow health protocols. However, the implementation of breastfeeding guidelines during the COVID-19 pandemic is a challenge for breastfeeding mothers, especially for healthy breastfeeding mothers. Even with the enactment of social restrictions, it causes increased stress during isolation for breastfeeding mothers(Davenport et al., 2020; Snyder & Worlton, 2021) The condition of people in Indonesia who are accustomed to socializing must change to being

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individuals who stay at home due to the advice from the government to avoid crowds and not to leave the house, thus limiting themselves to receive visits from relatives after having a baby. On the other hand, the COVID-19 pandemic also benefits breastfeeding mothers because mothers can focus on breastfeeding their babies without being disturbed by visits from relatives.

After the pandemic, breastfeeding continues to apply health protocols. Research related to the implementation of breastfeeding guidelines during and after the COVID-19 pandemic in healthy breastfeeding mothers is still minimal, even though the mother's behavior in implementing breastfeeding guidelines correctly will be able to ensure the safety of breastfeeding by mothers to babies. Thus, the objectives of this study are 1) to describe the behavior of mothers in breastfeeding during and after the COVID-19 pandemic; 2) analyze differences in the mother's behavior in breastfeeding during and after the COVID-19 pandemic.

### **METHODS**

This study used a cross-sectional design. The choice of this design is to describe the existence of a unique event at one time in a responsive and exploratory manner. In the COVID-19 pandemic situation, an exploratory design approach is considered the most appropriate. (Reiter, 2017). The research was conducted in October - December 2021 in Kediri Regency. The process of collecting data online via google form. The informed consent given includes the purpose of the research, the reward for being a respondent, namely being able to consult for free regarding breastfeeding and infant growth and development. This research has received a certificate of ethical conduct from the Ethics Commission of the Institute for Research and Community Service Karya Husada Kediri Health Science reference number 378/EC/LPPM/STIKES/KH/VII/2021. Breastfeeding mothers who gave birth in Januari 2021 were assisted and given information regarding the importance of breastfeeding and breastfeeding guidelines during the COVID-19 pandemic. The sample in this study were breastfeeding mothers who had babies aged less than 6 months who met the inclusion criteria. The inclusion criteria in this study were:

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- 1. Mothers who are willing to be respondents
- 2. Mothers who gave birth normally
- 3. Mothers who initiate Early Breastfeeding
- 4. Mothers who only give breast milk to babies
- 5. Breastfeeding mothers who lives at home with her husband

The flow of data collection can be seen in the chart below:

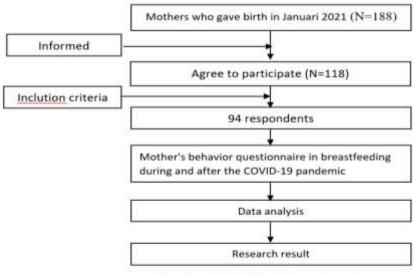


Chart 1: Research data collection flow

The research instrument used a questionnaire in the form of closed questions consisting of demographic data about the characteristics of the respondents, including age, occupation, income, parity and education. Specific data on the behavior of mothers in breastfeeding their babies during and after the COVID-19 pandemic, which includes the use of hand sanitizers or washing hands with soap before breastfeeding; breastfeeding using a mask; when coughing/sneezing cover mouth and nose with tissue or arm; cleaning touched surfaces with a disinfectant; using hand sanitizer or washing hands with soap after breastfeeding. Mother's behavior in breastfeeding is categorized on a Likert scale with a rating of 1 = never, 2 = sometimes, 3 = often, 4 = always. The score obtained from the total score obtained from the statement items in behavior was then categorized into good behavior (score 19-28), sufficient (score 10-18) and less (score < 9).

The collected data were analyzed using the Statistical Package for the Social Sciences (SPSS), version 21.0. This study uses descriptive statistics (e.g., numbers and percentages) and analytical statistics. Data analysis used the Wilcoxon Signed Ranks Test to compare behavior before and during the COVID-19 pandemic. The reason for using the Wilcoxon Signed Rank Test is because the sample data is not normally distributed, the two samples are paired groups and the samples are ordinal scale. Initially, there were 118 breastfeeding mothers who were willing to be respondents in this study. After being selected based on inclusion criteria and excluded samples who did not live at home with their husbands (N=6), gave birth to SC (N=8), IMD was not performed for reasons of mother and baby (N=10) so that a sample was obtained (N=94).

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### **RESULTS**

# **Characteristics of Respondents**

Table 1. Characteristics of Respondents

Characteristics	f	%	p-value
Age			< 0.001
< 20 year	2	2,1	
20-35 year	78	83	
> 35 year	14	14,9	
Working			< 0.001
No	56	59,6	
Yes	38	40,4	
Family Income			< 0.001
< District Minimum Income	79	84	
> District Minimum Income	15	16	
Education level			< 0.001
Low	20	21,3	
Middle	64	68,1	
High	10	10,6	
Parity			< 0.001
Primiparous	34	36,2	
Multiparous	60	63,8	
Total	94	100	

Table 1 shows data that the majority of respondents are aged 20-35 years (83%), 59.6% of respondents do not work, respondents who have family incomes below the minimum wage are 84%, respondents with secondary education are 68.1% and respondents are multiparous more than primiparous, namely 63.8%.

# Mother's Behavior in Breastfeeding During and After the COVID-19 Pandemic Table 2. Overview of Mother's Behavior in Breastfeeding During and After the COVID-19 Pandemic

Mother's Behavior	During the COVID-19 Pandemic						After the COVID-19 Pandemic				p-value
	Never	Rarely	Sometimes	Often	Always	Never	Rarely	Sometimes	Often	Always	
Use of hand sanitizer/ wash hands with soap before breastfeeding	9 (9,6%)	4 3 (45,7%)	1 6 (17%)	23 (24,5%)	3 (3,2%)	0 (0%)	0 (0%)	11 (11,7%)	20 (21,3%)	63 (67,0%)	0.02
Breastfeeding with a mask	22 (23,4%)	28 (29,8%)	18 (19,1%)	26 (27,7%)	0 (0%)	0 (0%)	2 (2,1%)	13 (13,8%)	29 (30,9%)	50 (53,2%)	0.04
When coughing/ sneezing, cover your mouth and nose with a tissue or your arm	54 (57,4%)	26 (27,7%)	10 (10,6%)	3 (3,2%)	3 (3,2%)	0 (0%)	0 (0%)	24 (25,5%)	24 (25,5%)	46 (48,9%)	0.01
Cleaning touched surfaces with disinfectant	1 (1,1%)	40 (42,6%)	28 (29,8%)	25 (26,6%)	0 (0%)	0 (0%)	0 (0%)	12 (12,8%)	24 (25,5%)	58 (61,7%)	0.01

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Use of hand sanitizer/ wash hands with soap after breastfeeding	37 (39,4%)	17 (18,1%)	14 (14,9%)	24 (25,5%)	2 (2,1%)	0 (0%)	3 (3,2%)	23 (24,5%)	17 (18,1%)	51 (54,3%)	0.04
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The description of mother's behavior in breastfeeding during and after the COVID-19 pandemic is depicted in table 2. Mother's behavior in breastfeeding before the COVID-19 pandemic in the use of hand sanitizer/washing hands with soap before breastfeeding is in the rare category (45.7%), a total of 29, 8% of mothers rarely breastfeed using masks, some 57.4% when coughing/sneezing mothers do not cover their mouth and nose with a tissue or arm. The behavior of mothers before breastfeeding by cleaning touched surfaces using disinfectants is classified as rare category, namely 42.6% and 39.4% mothers never use hand sanitizer/wash hands with soap after breastfeeding.

During the COVID-19 pandemic, 67% of mothers always use hand sanitizer/wash hands with soap before breastfeeding. Mothers who always use masks when breastfeeding babies are more than those who don't use masks, namely 53.2%. A total of 48.9% of mothers who breastfeed their babies cover their mouth and nose using a tissue or arm when coughing/sneezing. A total of 61.7% of mothers cleaned the touched surface using a disinfectant before breastfeeding. The number of breastfeeding mothers who always use hand sanitizer/wash their hands with soap after breastfeeding is higher than mothers who do not use hand sanitizer/wash their hands, which is 54.3%.

# The Differences of Mother's Behavior in Breastfeeding During and After the COVID-19 Pandemic

Table 3. The Differences of Mother's Behavior in Breastfeeding During and After the COVID-19 Pandemic.

Mother's behavior in breastfeeding	During pandemic f(%)	After pandemic f(%)		
Good	29(30,8%)	67 (71,3%)		
Moderate	40 (42,6%)	27 (28,7%)		
Sufficient	25 (26,6%)	0		
Total	94	94		
P value = $0.000$				

Table 3 illustrates the differences in maternal behavior in breastfeeding during and after the COVID-19 pandemic. Mother's behavior in breastfeeding is categorized into good, moderate and sufficient categories. During the pandemic, the behavior of mothers in the moderate category was quite a lot more than the good or sufficient category, which was 42.6%. Meanwhile, after the pandemic there was no mother's behavior in the sufficient category, while the good category was more than the moderate category, which was 71.3%.

The Wilcoxon Rank Test results obtained the Asymp value. Sig(2-tailed) obtained p value <0.05 so it can be concluded that there is a significant difference between the behavior of mothers in breastfeeding before and during the COVID-19 pandemic.

### **DISCUSSION**

The purpose of this study was to compare the behavior of mothers in breastfeeding their babies during and after the COVID-19 pandemic. The results of the study also describe how the behavior of breastfeeding mothers during and after the COVID-19 pandemic, which includes the use of hand sanitizers or washing hands with soap before breastfeeding; breastfeeding using

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a mask; when coughing/sneezing, cover mouth and nose with tissue or arm; cleaning touched surfaces with a disinfectant; using hand sanitizer or washing hands with soap after breastfeeding.

Overview of Mother's Behavior in Breastfeeding During and After the COVID-19

Pandemic

Most of the behavior of mothers in breastfeeding during the Covid-19 pandemic in the use of hand sanitizers/washing hands with soap before breastfeeding was in the rare category while after breastfeeding was in the newer category. In fact, good hand washing can prevent infection. (Luangasanatip et al., 2015).

When breastfeeding a baby, mothers rarely use masks. This behavior is probably because the use of a mask makes the mother unable to breathe freely because the nose and mouth are covered by the mask. The results of a systematic review stated that the behavior of using masks in the community was still low.(bin-Reza et al., 2012) The possibility of using masks on mothers before the COVID-19 pandemic was carried out by breastfeeding mothers who were sick with flu, cold or cough. As research states that personal protective equipment to help reduce the risk of exposure to the influenza virus by using a mask.(bin-Reza et al., 2012) Likewise, the behavior of breastfeeding mothers when sneezing/coughing covers with a tissue or arm is included in the rare category. Whereas when coughing/sneezing, germs and viruses can come out of the respiratory tract so that they can be transmitted to other people. When coughing/sneezing, it is recommended to cover your mouth and nose with a tissue or a mask. Dispose of used tissues and masks and perform hand hygiene after contact with respiratory secretions. If a tissue is not available, then cough or sneeze into the elbow or sleeve and not in the hands.(Shrivastava & RamBihariLal Shrivastava, 2019) The behavior of the mother before breastfeeding by cleaning the touched surface using a disinfectant is in the rare category. This behavior is rarely carried out by breastfeeding mothers, possibly because exposure to the virus before the COVID-19 pandemic has not frightened the public.

After the Covid-19 pandemic, most mothers always use hand sanitizer/wash hands with soap before and after breastfeeding. During the Covid-19 pandemic, hand hygiene is necessary by washing hands with soap for 40-60 seconds by rubbing all surfaces of the hands, rinsing hands and drying thoroughly with disposable towels and using towels to turn off the tap or by rubbing hands using disinfectant for 20-30 seconds to all areas of the hands, then rub hands and wait for them to dry. (Shrivastava & RamBihariLal Shrivastava, 2019) Hand sanitizer can be used before breastfeeding, but if your hands look dirty you need to wash them with soap and water. This study shows that during the pandemic, mothers who always use masks when breastfeeding babies are more than those who don't use masks. The use of masks, especially during a pandemic, can protect mothers and babies from exposure to the virus. In fact, during UNICEF the Covid-19 pandemic, recommends the use of masks when breastfeeding.(UNICEF, 2020) The use of disposable masks, especially when the mother has the flu, cough or cold, must cover her nose and mouth. In terms of mother's behavior when coughing/sneezing, breastfeeding mothers covered their mouths and noses with tissue or arms more than those who did not. Even most breastfeeding mothers also clean the touched surfaces using a disinfectant before breastfeeding. Research says that the coronavirus can survive for about three days on plastic and stainless steel surfaces. Viruses can also survive for an entire day on cardboard and can only survive for only about four hours on copper surfaces. (Suman et al., 2020).

# Differences of Mother's Behavior in Breastfeeding During and After the COVID-19 Pandemic

The results of data analysis using the Wilcoxon rank test showed p- value=0.000, there were differences in the behavior of mothers in breastfeeding their babies during and after the

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COVID-19 pandemic. In this study, the most behavioral differences were found in behavior when sneezing/coughing using a tissue or the inside of the arm. During the pandemic, the behavior of mothers who always used a tissue or inner arm when coughing was only 4.3%, then after the pandemic it became 48.9%. This behavior is likely because the mother is aware that the Covid-19 virus can be transmitted through airborne transmission. (Marchiori, 2020; Yuen et al., 2020) It is even mentioned that the COVID-19 virus can survive in the air for up to 3 hours. Respondents who always use masks while breastfeeding have increased during the COVID-19 pandemic, by 25.5%. There are still respondents who have never used a mask while breastfeeding (2.1%) possibly because the use of a mask seems to be an obstacle in physical contact with the baby while breastfeeding. This raises the opinion that wearing a mask has become a visual factor that strengthens physical strength as a public health measure indicating that after the pandemic all respondents had cleaned the surface they touched before. This respondent's behavior is based on the respondent's awareness of the dangers posed by viruses, especially those attached to surface areas. Thus, it can be said that each indicator of mother's behavior in breastfeeding her baby is different between during and after the COVID-19 pandemic. This difference in behavior is because mothers have received information related to breastfeeding guidelines during the COVID-19 pandemic. If it is related to the characteristics of the respondents, most of the respondents do not work so they have a lot of time to absorb information from outside. In terms of education, most of the respondents have secondary education, so that the researcher assumes that it is easier to absorb the information provided. Providing information from outside is a cognitive component that can influence human behavior. Changes in the mother's behavior in breastfeeding that are more towards the application of breastfeeding guidelines during the Covid-19 pandemic can be said to be a form of a person's response or reaction to a stimulus or an external stimulus. (Alghamdi & Badr, 2022; Chien et al., 2022; Kilic et al., 2021; Martinelli et al., 2021; Pandey et al., 2021).

Breastfeeding mothers who are faced with the current Covid-19 pandemic are a stimulus, it is hoped that mothers can make changes to appropriate breastfeeding patterns in accordance with health protocols as an effort to control and prevent the spread of Covid-19 during the breastfeeding process, because the benefits of breastfeeding far exceed the potential for transmission Covid-19. The Covid-19 pandemic condition will make breastfeeding mothers take steps to control and prevent the risk of spreading Covid-19 to babies during the breastfeeding process. Even though breastfeeding mothers are in good health or not infected with Covid-19, mothers need to pay attention to infection prevention and control measures. Future research is expected to use a prospective design so that breastfeeding behavior after the pandemic can be described in detail.

## **CONCLUSION**

Differences in the mother's behavior in breastfeeding her baby before and during the COVID-19 pandemic could be due to mothers having received accurate information about breastfeeding guidelines during the COVID-19 pandemic. This difference proves that information related to breastfeeding guidelines during the pandemic is not only given to breastfeeding mothers who are positive for COVID-19, but also to healthy breastfeeding mothers. The need for support and the role of various parties, especially families so that mothers can be consistent in breastfeeding by applying the correct breastfeeding guidelines.

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