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**Zoom meeting applications usage for counseling on breastfeeding: Improving knowledge and attitudes during the COVID-19 Pandemic in West Java, Indonesia**

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**Abstract**

**Background:** Covid-19 is a highly contagious and pathogenic viral infection caused by Severe Acute Respiratory Syndrome Coronavirus Type 2 (SARS-CoV-2). At the end of March 2020, the President of the Republic of Indonesia issued regulations regarding large-scale social restrictions which require all people to carry out activities from home. These restrictions have an impact on how breast milk is given to babies, especially newborns whose mothers are positive for Covid-19.

**Purpose:** To determine the effect of health education through online media on the knowledge and attitudes of women of childbearing age in providing breast milk during the Covid-19 pandemic.

**Method:** Research with a pre-experimental design on 103 women of childbearing age. Research subjects were selected using convenience sampling techniques, while data collection was carried out by filling out a questionnaire using Google Form. Intervention is carried out in the form of text messages, images, online videos. Data analysis used univariate and bivariate with the Chi-Square test.

**Results:** There were differences before and after the intervention regarding mothers' knowledge and attitudes in providing exclusive breastfeeding to babies during the Covid-19 pandemic using the non-parametric Wilcoxon test with a p-value of 0.001 ( $p < 0.05$ ). This shows that providing online education via the Zoom application is effective in increasing knowledge and attitudes.

**Conclusion:** The information provided through online media is effective in increasing the knowledge and attitudes of women of childbearing age regarding breastfeeding during the Covid-19 pandemic, so that it can be applied to health education on other topics to improve knowledge and attitudes. On the other hand, there are shortcomings in delivering material virtually, namely the unstable internet network, which makes the speaker's voice intermittent, so that the material given is not conveyed well to the participants.

**Suggestion:** It is necessary to hold webinars on an ongoing basis with a focus on female participants of childbearing age and not from the nursing profession or health workers but also the wider community.

**Keywords:** Breastfeeding; Corona Virus-19; Health Educational Virtual.

**INTRODUCTION**

Covid-19 is a highly contagious and pathogenic viral infection caused by Severe Acute Respiratory Syndrome Coronavirus Type 2 (SARS-CoV-2) and has become a major viral outbreak and threatens public health throughout the world (Anand, Karade,

Sen, & Gupta, 2020; Luo, Guo, Yu, Jiang, & Wang, 2020; Xiong, Lipsitz, Nasri, Lui, Gill, Phan, & McIntyre, 2020). This virus was first detected in Wuhan City, China at the end of 2019 (Shereen, Khan, Kazmi, Bashir, & Siddique, 2020; Xiong et al.,

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2020). This virus has been declared a world pandemic by the World Health Organization because as of March 31 2020 the number of cases reached 719,758 and the number of deaths reached 33,673 worldwide. This virus has spread in 200 countries including Indonesia and at the end of March 2020, the President of the Republic of Indonesia issued Government Regulation Number 21 of 2020 concerning large-scale social restrictions, namely work from home (WFH), students from home (SFH), social distance by implementing restrictions for crowding, maintaining a distance of at least 1 meter, avoiding leaving the house, and limiting visiting crowded places if it is not too urgent, and avoiding physical contact with other people (Setiati & Azwar, 2020; Huremović, 2019).

The pandemic has caused drastic changes in people's lives, requiring the implementation of social distancing (Xiong et al., 2020). Social distancing has an impact on all community activities, including breastfeeding activities, especially newborn babies whose mothers are positive for Covid-19. Reports show that children of all ages are more sensitive to Covid-19, with no significant gender differences and children are especially sensitive to this virus (Williams, Namazova-Baranova, Weber, Vural, Mestrovic, Carrasco-Sanz, & Pettoello- Mantovani, 2020). Covid-19 has attacked all ages and can be found in pregnant women and newborn babies (Ovalı, 2020).

Care for babies of mothers confirmed for Covid-19 should be carried out by postnatal separation between mother and baby, as well as preventing mothers from breastfeeding directly to minimize direct contact as a way to protect the baby's health from potential transmission (Tomori, Gribble, Palmquist, Ververs, & Gross, 2020; World Health Organization, 2020). The Centers for Disease Control (CDC) recommends that if the mother is suspected or confirmed to be infected with Covid-19, then separate treatment options between mother and child should be considered as the first choice (Centers for Disease Control and Prevention, 2020). Providing breast milk to babies whose mothers suffer from Covid-19 can be done by pumping breast milk and giving it using a spoon/cup (Ovalı, 2020; World Health Organization, 2017). In addition, using a

certified milk bank service is designed to protect breast milk supplies with strict screening criteria (Marinelli, 2020). Long-term risks and benefits for the baby must be balanced, so that there is no reason for the baby not to be given breast milk (Zeng, Xia, Yuan, Yan, Xiao, Shao, & Zhou, 2020).

According to the United Nations International Children's Emergency Fund (UNICEF), there is evidence that breastfeeding strongly supports a baby's growth and development. Skin-to-skin contact and exclusive breastfeeding from an early age helps babies develop and there is no reason to stop giving breast milk to babies for six months, even in the event of a pandemic outbreak (United Nations International Children's Emergency Fund, 2020). Therefore, mothers who are suspected of having Covid-19 must be informed about the importance of giving breast milk to their babies (Williams et al., 2020). Lack of information about how to breastfeed, especially during the pandemic, will cause mothers to lack understanding of how to breastfeed their babies, especially mothers who are suspected of having Covid-19. In an effort to prevent these problems from occurring, breastfeeding mothers must receive appropriate information about how to breastfeed during a pandemic, one of which is through providing online health education as a learning medium.

Online learning has become popular globally due to the impact of Covid-19 (Zhang, Bi, & Mercado, 2023). Online learning is the delivery of information using an internet network with accessibility, connectivity, flexibility, and the ability to produce various interactions (Moore, Dickson-Deane, & Galyen, 2011). Online learning has many benefits, such as obtaining information anytime and anywhere. It only requires the support of mobile devices such as smartphones, laptops, computers and tablets (Gikas & Grant, 2013).

Various online learning modes were adopted to overcome difficulties in providing education due to the pandemic, such as Zoom, WebEx, and Microsoft Teams platforms that enable synchronous online learning to be used nationwide (Zhang et al., 2023). The Zoom Meeting platform is effective in implementing learning, initially used by 10 million participants in December 2019, increasing in April

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2020 to more than 300 million (Husain, Herianto, & Jasmiana, 2021; Evans, 2020). Through the Zoom Meeting application, health education material providers can communicate directly with anyone using a video camera, participants can use the raise hand feature, send private messages, upload material in PDF, Microsoft Word or Microsoft Excel format, and other advantages.

**RESEARCH METHOD**

A pre-experimental research design with a one-group pretest-posttest design was carried out in 2020 using the Zoom Meeting platform. The population in this study was all women in West Java with the inclusion criteria being all adult women who could speak Indonesian, had access to the Zoom Meeting application, and were willing to participate. The sampling technique used accidental sampling with a total of 103 participants.

Information about this webinar is distributed via flyers on social media, such as WhatsApp groups, WhatsApp status, Facebook, Twitter, Instagram and Telegram. Prospective participants who are interested in taking part in this activity are asked to fill in the registration link provided online. The participants taken have filled out the questionnaire completely (pretest and posttest) and participated in the educational event from start to finish.

Data was collected by filling out a questionnaire on the google form link. The research instrument consists of demographic data, a knowledge questionnaire formed in the form of a multiple choice test, and an attitude questionnaire. Participants were given a knowledge and attitude questionnaire before the intervention, then given health education regarding breastfeeding management in the new normal era, and again given a questionnaire to measure the level of knowledge and attitudes after the intervention. Knowledge and attitude variables were measured using questionnaire results with two categories. Knowledge is high if the score obtained is  $\geq 80$ , while knowledge is low if the score obtained is  $< 80$ . A positive attitude if the score obtained is  $\geq 50$ , while a negative attitude if the score obtained is  $< 50$ .

The material presented is about the benefits of breast milk for mothers and babies, support for breastfeeding mothers, how to properly give breast milk to mothers who are people under supervision and patients under supervision in the pandemic era, how to store breast milk, and handling children infected with Covid-19. The analysis used was univariate analysis to describe participant characteristics through descriptive statistics and bivariate analysis through the wilcoxon test to determine the effect of health education on mothers' knowledge and attitudes regarding breastfeeding management in the new normal era.

**RESEARCH RESULTS**

**Table 1. Distribution Characteristics of Participants (N=103)**

<b>Variables</b>	<b>Results</b>
<b>Age (Mean±SD)(Range)(Years)</b>	(27.48±5.941)(19-38)
<20	15/14.6
20-35	69/67.0
>35	19/18.4
<b>Education levels (n/%)</b>	
High School	22/21.4
University	81/78.6

The results of the analysis based on table 1 show that the largest number of participants were women of childbearing age in the age range of 20-35 years, which was 69 participants (67%). The education of the participants was mostly university level, which was 81 participants (78.6%).

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**Table 2. Knowledge and Attitude of Partisipants (N=103)**

Variables	Pre-Test		Post -Test		Z-Test	p
	n/%	Mean+SD	n/%	Mean+SD		
<b>Knowledge</b>						
High	75/72.8	3.45+1.21	101/98.1	4.51+0.59	-6.864	0.001
Low	28/27.2		2/1.9			
<b>Attitude</b>						
Positive	90/87.4	3.33+0.79	101/98.1	4.00+0.66	-6.086	0.001
Negative	13/12.6		2/1.9			

Table 2 shows the level of knowledge of the participants before the intervention, 75 participants (72.8%) were included in the high category and the mean+SD was obtained (3.45+1.21). After the intervention there was an increase to 101 participants (98.1%) with mean+SD (4.51+0.59). Furthermore, the attitudes of 90 participants (87.4%) were in the positive category before the intervention with mean+SD (3.33+0.79). After the intervention there was an increase of 101 participants (98.1%) with mean+SD (4.00+0.66). Based on the results of the non-parametric Wilcoxon test, it shows that there is a significant difference in the average knowledge and attitudes before and after the intervention with a p-value of 0.001 ( $p < 0.05$ ).

## DISCUSSION

Based on the research results, it was found that education provided online via the Zoom meeting application could increase participants' knowledge. This is because participants want to know more about health, especially how to breastfeed during the Covid-19 pandemic. They are interested in getting the material provided because it can be obtained just by joining virtually via Zoom without having to be present somewhere which requires time and money. Zoom is a web-based platform where live video broadcasts are used by many teachers to deliver lectures effectively and easily. Meetings via Zoom have attracted the attention of many educational institutions who use it as a learning platform (Hilal & Hilal, 2022).

Participants can get the information they need, especially material related to breastfeeding during Covid-19. According to the World Health

Organization, mothers throughout the world should exclusively breastfeed their babies for the first 6 months to achieve optimal growth, development and health (World Health Organization, 2019). However, even though breastfeeding is a natural process, it is not always easy for mothers (Dağlı & Topkara, 2023). Mothers need support to start and continue breastfeeding their babies (World Health Organization, 2019). The existence of a pandemic increases the potential risk of transmission. This causes mothers to be faced with the dilemma of coming to health institutions in an effort to obtain breastfeeding education and support (Wu, Zhang, Liu, H., Duan, Li, Fan, & Huang, 2020). Therefore, education provided via Zoom is the right solution.

The success of education is influenced by various factors, including educators mastering the material presented, being on target, the condition of participants during education, and the process during education. If we look at the level of education, the participants appear to have an adequate level of education, namely at least equivalent to high school. Someone who is highly educated will have broader knowledge than someone who has low education (Notoatmodjo, 2010). The higher the level of education, the higher the basic abilities a person has, but conversely, the lower the level of education, the more limited the knowledge they have, especially basic attitudes regarding breastfeeding.

Participants' attitudes towards managing breast milk during the Covid-19 pandemic improved after being given the intervention. This happens because receiving information broadens one's horizons and thus influences one's attitudes. Judging from the level of education, participants appear to have an

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adequate level of education, namely at least high school equivalent. This is in accordance with previous research which shows that there is a relationship between education level and knowledge and attitudes (Chan, 2009). In this study, the majority of participants who attended the webinar were university graduates, especially nursing professions (78.6%), where a nurse with higher education can perform actions skillfully and according to procedures. Nurses who have professional skills have the ability to communicate effectively and have good standards of behavior (Chan, 2009). Good attitudes are related to changes in behavior because behavioral beliefs influence a person's attitude towards behavior for the better (Glanz, Rimer, & Viswanath, 2015). Providing education via Zoom is effective in improving the attitudes of breastfeeding mothers. Telehealth is an effective method in the Covid-19 pandemic process, one of which is through the Zoom application (Hong, Li, Li, Li, Li, Xiong, & Zhou, 2020).

West Java is the province with the second most internet users after Jakarta. This was stated by the Indonesian Internet Service Providers Association which stated that almost all people in West Java used the internet during the Covid-19 pandemic (Indonesian Internet Service Providers Association, 2023). Almost everyone has a device to search for information online, including through webinars held virtually via Zoom. So, providing online education via Zoom is effective in increasing knowledge and attitudes during the pandemic.

## CONCLUSION

The information provided through online media is effective in increasing the knowledge and attitudes of women of childbearing age regarding breastfeeding during the Covid-19 pandemic, so that it can be applied to health education on other topics to improve knowledge and attitudes. On the other hand, there are shortcomings in delivering material virtually, namely the unstable internet network, which makes the speaker's voice intermittent, so that the material given is not conveyed well to the participants.

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## SUGGESTION

Webinars need to be held on an ongoing basis with a focus on female participants of childbearing age and not from the nursing profession or health workers but also the wider community.

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