

Exclusive Breastfeeding Practice and Its Association with Breastfeeding Self-Efficacy among Mothers Giving Birth during the COVID-19 Pandemic in Indonesia: A Brief Report

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ABSTRACT

Background: Breast milk is the best nutrition for most infants, and current recommendations encourage mothers to keep giving breast milk during the COVID-19 pandemic.

Subjects and Method: This is an analytic cross-sectional study involving mothers giving birth since March 2020 and their infants aged under 6 months. An online-based questionnaire, including the Breastfeeding Self-Efficacy Scale-Short Form (BSES-SF), was distributed through social media from April to September 2020. The dependent variable was exclusive breastfeeding rate, and the independent variables were BSES-SF score, mother working status, educational level, place of birth, birth method, and COVID-19 status.

Results: There were 113 respondents, and the rate of exclusive breastfeeding was 79.6%. Self-

efficacy score in mothers who give exclusive breastfeeding (Mean= 58.4; SD= 0.8) was higher than non exclusive breastfeeding (Mean= 44.8; SD= 13.4) and it was statistically significant ($p < 0.001$).

Conclusion: This study showed that during the COVID-19 pandemic exclusive breastfeeding rate might remain high in populations with good breastfeeding self-efficacy.

Keywords: exclusive breastfeeding, breastfeeding self-efficacy, child nutrition, COVID-19

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BACKGROUND

Current recommendations prioritize breastfeeding for mothers giving birth during a pandemic, including mothers suspected or positively confirmed coronavirus disease 2019 (COVID-19). There is currently no strong evidence that severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), the virus that causes COVID-19, is transmitted through breast milk (CDC and WHO, 2020). Breast milk also contains various antibodies and bioactive com-

pounds that play an important role in the immune system so that it will protect against various infections, including respiratory infections (Williams et al., 2020).

However, the data reported a decrease in breastfeeding rates by 40-50% in some hospitals following the declining rate of early initiation breastfeeding and rooming-in practice during COVID-19 pandemic (Bhatt, 2020). One of the factors positively associated with breastfeeding duration and exclusivity is maternal breastfeeding self-

efficacy, which is reflective of a mother's belief in her ability to succeed in breastfeeding. (Brockway et al., 2007; Otsuka et al., 2014). It is necessary to evaluate breastfeeding self-efficacy because it can be modified to improve the exclusive breastfeeding rate (Dennis, 2003).

There is still not much data regarding the effect of COVID-19 pandemic on the exclusive breastfeeding practice. We aim to evaluate the exclusive breastfeeding rate and maternal breastfeeding self-efficacy in Indonesian women giving birth during the COVID-19 pandemic.

SUBJECTS AND METHOD

1. Study Design

It was a cross-sectional study conducted from April to September 2020. We relied on social media to distribute an announcement containing our study's details.

2. Population and Sample

The eligible participants were Indonesian mothers giving birth since March 2020 and their infants aged under 6 months. Mothers with twins or having infants with certain medical problems that were required to fast at early days of birth were excluded. Data collection was done by purposive and snowball sampling using an online-based questionnaire, distributed through social media. The questionnaire consisted of socio-demographic data, questions about breastfeeding practices, and the Breastfeeding Self-efficacy scale-short form (BSES-SF) Indonesian version. There were 14 multiple choice questions to assess infant nutrition given during the COVID-19 pandemic, and some related factors such as early initiation breastfeeding, rooming-in after birth, COVID-19 status infection of mother, and information obtained about breastfeeding practice during the pandemic.

3. Study Variables

The Exclusive breastfeeding rate was defined as the proportion of infants who received only breast milk and no other liquid (including formula milk, water, or juice) or solid except for vitamin, mineral supplements, or medicines. Breastfeeding could be delivered either directly or fed expressed.

4. Operational Definition of Variables

Working status was a mothers' working status; mothers who worked outside the home for income were classified as yes.

Education level was a formal education reached by participants. Elementary and junior high school were classified as primary education. High school was classified as intermediate education. University was classified as high education.

Place of birth was the place where mothers gave birth. Mother and child hospital was a specialty hospital that provided maternal and pediatric services. Private general hospital was a hospital that provided all medical services in general and was managed by a private institution.

Government general public hospital was a hospital that provided all medical services in general and was managed by a government. Other places of birth such as clinics, public health centers, houses, etc were classified as others.

Birth method was the way of childbirth delivery. It was classified as vaginal birth and caesarian section.

COVID-19 status was classified as suspected or confirmed and negative. Mothers with suspected or confirmed COVID-19 were mothers who resulted in a reactive antibody of SARS-CoV-2 in a blood sample or positive SARS CoV-2 antigen/RNA in nasopharyngeal swab sample.

Breastfeeding self-efficacy was defined as mother's belief in her ability to succeed

in breastfeeding. It was measured by the BSES-SF.

5. Study Instruments

The BSES-SF instrument has 14 items with a 5-point Likert-type scale, with responses from not at all confident (1) to always confident (5). Total scores can range from 14 to 70, higher scores reflect better breastfeeding self-efficacy (Tuthill, 2016). The BSES-SF has been translated and validated to the Indonesian version from previous studies (Handayani, 2013; Wardani, 2012).

6. Data Analysis

The data were analyzed with IBM SPSS Statistics version 24.0 and expressed as numbers and percentages. The Chi-square, Fischer’s exact test, and independent t-test

were used for bivariate analysis. Odds ratios (OR) and 95% confidence interval (CIs) were also calculated, differences with $p < 0.005$ were considered significant.

7. Research Ethics

This study was approved by the Ethics Committee of Faculty of Medicine, Pelita Harapan University, No. 149/K-LKJ/ETIK-/VII/2020.

RESULTS

1. Sample Characteristics

Table 1 reported the results of respondent characteristics. Table 1 showed that there were 113 respondents, most of them were under 40 years old (98.3%) and highly educated (90.3%).

Table 1. Respondent Characteristics

Variables	Category	Frequency (N)	Percentage (%)
Mothers			
Age (year)	20-29	55	48.7
	30-39	56	49.6
	40-49	2	1.8
Education level	Middle low	11	90.3
	High	102	66.4
Working status	Yes	75	66.4
	No	38	33.6
Antenatal (ANC) Care	Obstetrician	99	87.6
	Midwife	13	11.5
	Never	1	0.9
Place of Birth	Mother and child hospital	31	27.4
	Private general hospital	49	43.4
	Government general hospital	18	15.9
	Others	15	13.3
Birth method	Vaginal birth	48	42.5
	Cesarean section	65	57.5
Infants			
Gestational age	Pre-term	18	15.9
	Aterm	92	81.4
	Post-term	1	0.9
	Not sure	2	1.8
Birth weight (gram)	<2500	2	1.8
	2500-4000	109	96.4
	>4000	2	1.8
Chronological age	< 1 month	17	15.0
	1-3 month	76	67.3
	3-6 month	20	17.7
Perinatology ward	Yes	14	12.4
	No	99	87.6

Table 1 showed that antenatal examinations were generally carried out by obstetricians, and more than 50% of respondents gave birth by cesarean section. Almost all infants were born at term with normal birth weight and did not require treatment in perinatology wards, when filling out the questionnaire, more than 60% of infants were aged 1-3 months old.

Table 2 reported factors associated with breastfeeding practices. Table 2 showed that a total of 49 respondents (43.4%) underwent testing related to COVID-19 infection, 3 were confirmed with COVID-19 by positive results for SARS-CoV-2 RNA in nasopharyngeal swab, 3

were suspected based on the reactive antibody of SARS-CoV-2 using rapid detection kits (RDT) and imaging findings. As much as 30% of respondents received information about breastfeeding practices during the COVID-19 pandemic, mostly from health care professionals and social media. Twelve infants received merely formula milk while still in health facilities, 21 (72.4%) were suggested by health care professionals with the most common reasons were dehydration, inadequate breast milk supply, and hyperbilirubinemia. The exclusive breastfeeding rate in this study was 79.6%.

Table 2. Breastfeeding practices and its related factors

Characteristics	Category	N	%
Information about breastfeeding practices during the pandemic	None	75	66.4
	Yes	38	33.6
	- Healthcare professional	14	
	- Social media	9	
	- Many sources (healthcare professional/social media/friends/relatives)	15	
Early initiation of breastfeeding	Yes	69	61.1
	No	44	38.9
Rooming-in practice	Yes	91	80.5
	No	22	19.5
Nutrition at health facilities	Direct breastfeeding	74	65.5
	Expressed breastmilk	1	0.9
	Formula milk	12	10.6
	Mixed (direct/expressed/donor breastmilk/formula milk)	26	23
Nutrition at home	Direct breastfeeding	56	49.5
	Expressed breast milk	3	2.7
	Formula milk	3	2.7
	Mixed (direct/expressed/donor	51	45.1
Exclusive breastfeeding	Yes	90	79.6
	No	23	20.4

2. Bivariate Analysis

Table 3 showed the results of bivariate analysis using Chi-square or Fisher’s exact test. There was a significant difference in

mean BSES-SF score between respondents who provided exclusive breastfeeding and respondents who did not exclusively breast-feed (95% CI= 7.86 to 19.35; p <0.001).

There was no significant association between exclusive breastfeeding practice and mother working status (95% CI 0.23 to 1.4; p= 0.214), education level for intermediate education (95% CI= 0.09 to 44.35; p= 1.000) and for high education (95% CI= 0.23 to 64.26; p= 0.380), place of birth for

private general hospital (95% CI= 0.25 to 2.23; p= 0.592), for government general hospital p=496; 95% CI 0.16 to 2.44, for others (95% CI= 0.11 to 3.63; p= 1.000), birth method (95% CI= 0.28 to 1.77; p= 0.458), and maternal COVID-19 status (95% CI= 0.05 to 1.37; p= 0.121).

Table 3. Association of BSES-SF score and exclusive breastfeeding practice

Group	BSES-SF Score		95% CI		p
	Mean	SD	Lower limit	Upper limit	
Exclusive breastfeeding	58.4	0.8	7.86	19.35	<0.001
Non-exclusive breastfeeding	44.8	13.4			

Table 4. Association of exclusive breastfeeding with some related factors

Variables	Exclusive breastfeeding		OR	95%CI		P
	Yes (%)	No (%)		Lower limit	Upper limit	
Working status						
Yes	61 (69.3)	14 (56)	0.56	0.23	1.4	0.214
No	27 (30.7)	11 (44)				
Education level						
Primary	1 (1.1)	1 (4)	Reff			
Intermediate	6 (6.8)	3 (12)	2.00	0.09	44.35	1.000
High	81 (92.1)	21 (84)	3.86	0.23	64.26	0.380
Place of Birth						
Mother and child hospital	25 (28.4)	6 (24)	Reff			
Private general hospital	37 (42)	12 (48)	0.74	0.25	2.23	0.592
Government general hospital	13 (14.8)	4 (20)	0.62	0.16	2.44	0.496
Others	13 (14.8)	2 (8)	0.64	0.11	3.63	1.000
Birth method						
Vaginal birth	39 (44.3)	9 (36)	0.71	0.28	1.77	0.458
Cesarean section	49 (55.7)	16 (64)				
COVID-19 status						
Suspected/confirmed	3 (3.4)	3 (12)	0.26	0.05	1.37	0.121
Negative	85 (96.6)	22 (88)				

DISCUSSION

This was the first study that assess breastfeeding practice in Indonesia during the COVID-19 pandemic. The rate of exclusive breastfeeding in our study was 79.6%. It was higher than the data from national census and other studies which showed the exclusive breastfeeding rate in Indonesia ranged from 40-50% (Central Bureau of

Statistics, 2018; Ananta et al., 2016; Yohmi et al., 2015).

This result was quite surprising because it was assumed that the breastfeeding rate would have declined during the pandemic. Some possibilities may explain this result. First, a large proportion of study respondents had good breastfeeding self-

efficacy, based on the mean score of BSES-SF questionnaire (Mean= 55.4; SD= 1.02). There is no universal cut-off point used to classify BSES-SF score. A study by Nankumbi et al. (2019) in Uganda considered a score of more than 50 as high breastfeeding self-efficacy. Another Study by Nanishi et al (2015) was conducted to determine a cut-off point for scores of BSES-SF in Japan, and the result showed that a BSES-SF score above 50 was a good predictor of continuity of exclusive breastfeeding after discharged.

Second, there was only 5.3% of respondents suspected or confirmed with COVID-19 infection. Most of the respondents (92%) in this study were healthy and asymptomatic, and only 43.4% of respondents were investigated for COVID-19 infection. Screening of COVID-19 infection in pregnant women was not routinely done at this study period, and some healthcare facilities in Indonesia still generally use antibody-based rapid detection kits (RDT) to detect COVID-19 infection in hospitalized patients. It might obscure the pandemic effect on the exclusive breastfeeding rate in the study.

There was a significant difference in the mean score of BSES-SF between groups with exclusive breastfeeding and not exclusively breastfed ($p < 0.001$). It showed that improving the BSES-SF score could indeed increase the exclusive breastfeeding rate. The BSES-SF questionnaire consists of statements describing breastfeeding techniques, mothers' attitude and beliefs related to successful breastfeeding experience. It was adapted from Bandura's social cognitive theory, which postulated that breastfeeding self-efficacy was influenced through previous breastfeeding experiences, observed successful breastfeeding behaviors by others, encouragement from significant others to breastfeed, and current physical

and affective state (Dennis 2003). Educational interventions (providing information, demonstrations, and discussions) and supportive interventions (social support, counseling, consultation) were effective to improve the BSES-SF score.

A meta-analysis by Brockway et al. (2017) showed that interventions were most successful when focused on education, delivered in both hospital and community settings, implemented in the postpartum period, and using multiple contact points. Another study in postpartum Chinese mothers found that mothers' breastfeeding self-efficacy was highly related to their perceived social supports from husband and nurses/midwives. Nurses and midwives have a vital role in promoting breastfeeding self-efficacy during the hospital stay, especially for new mothers (Yang et al., 2016).

Dissemination of information regarding breastfeeding practices during the pandemic is still lacking, 30% of respondents received that information, and only 20% of respondents received information directly from health professionals. Social media plays an important role in information dissemination at this time, but unfortunately, some studies showed lots of inaccurate information about COVID-19 came from social media, causing panic and excessive worries (Ahmad 2020; Islam 2020). Health professionals are expected to be more active in providing accurate information and play a supportive role for breastfeeding mothers during the pandemic. The use of technology for virtual meetings or teleconsultation can probably be an option during this pandemic. The limitation of this study was the use of an online-based questionnaire, thus limited the study respondents only to mothers who familiar and fluent in using internet technology. Data from the World Bank in 2019 showed that not more than

50% of the population in Indonesia using the internet, so respondents in this study might not represent the overall maternal population in Indonesia.

This study concluded that exclusive breastfeeding rate in Indonesian mothers giving birth during the COVID-19 pandemic was high, and their breastfeeding self-efficacy was good. There was a significant difference in mean BSES-SF scores between groups with exclusive breastfeeding and not exclusively breastfed. It showed that during the COVID-19 pandemic exclusive breastfeeding rate might remain high in populations with good breastfeeding self-efficacy. A follow-up study with larger population coverage is needed to more represent the Indonesian maternal population.

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None

CONFLICT OF INTEREST

None declared

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