

INFANT FEEDING PRACTICES AND ANALYSIS OF FACTORS AFFECTING EXCLUSIVE BREASTFEEDING

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Article Information

Received: 17 July 2021
Revised: 27 October 2021
Accepted: 18 November 2021

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DOI

10.20884/1.jks.2021.16.3.1726

ABSTRACT

The coverage rate of exclusive breastfeeding in Indonesia is still low despite its ability to affect a baby's health status and ability to survive. In 2017, only 35.73% of babies in Indonesia received exclusive breastfeeding for up to 6 months. This study aims to determine infant feeding practices and identify the factors that influence the practice of exclusive breastfeeding in Yogyakarta. This is a descriptive analysis study with a cross-sectional approach. The instruments that have been used in this study were the demographic data questionnaire, the Iowa Infant Feeding Attitude Scale (IIFAS) questionnaire, and the Breastfeeding Self Efficacy Scale-Short Form (BSES-SF) questionnaire. A total of 421 mothers were involved in this study and the research was conducted between June 2019 to April 2020 in Sleman Regency, Yogyakarta, Indonesia. Correlation data analysis was performed using chi-square and point biserial correlation and the multivariate analysis used logistic regression. Infant feeding practice was high with 82.4% of infants receiving exclusive breastfeeding. It was found that employment status, knowledge, mothers' attitudes, and self-efficacy about breastfeeding have significant correlations with exclusive breastfeeding. Employment status, knowledge, mothers' attitudes, and self-efficacy about breastfeeding are factors that can encourage exclusive breastfeeding.

Keywords: Breastfeeding; breastfeeding attitudes; exclusive breastfeeding; infant feeding practices; self-efficacy of breastfeeding



ISSN : 1907-6637

e-ISSN : 2579-9320

INTRODUCTION

The infant mortality rates in Yogyakarta Province were high and fluctuated between 2014 to 2017. Infant mortality rates between 2014 to 2017 were 405, 329, 278, and 313 deaths per 1,000 live births, consecutively. The highest number of infant deaths was in Bantul Regency (108 cases) and the lowest was in Yogyakarta City (33 cases) (Yogyakarta Provincial Health Office, 2017). A baby's health status, growth, and development can be influenced by the breastmilk feeding pattern provided to the baby at the beginning of life. Breastmilk is very useful for boosting the baby's immune system, reduces the risk of obesity, and optimizes brain development. Therefore, children who are breastfed tend to become smarter than children who were not breastfed (Indonesia Ministry of Health, 2016).

The coverage rate of breastfeeding in Indonesia is still low. In 2017, the number of babies who were breastfed for 0-5 months was 46.74%, while babies who were exclusively breastfed for up to 6 months were 35.73%. The low coverage of breastfeeding is also seen in almost all regions in Indonesia. The province in Indonesia that have the best coverage of breastfeeding is the Yogyakarta area, where the number of babies who are breastfed for 0-5 months was 66.12%, while the number of babies who are breastfed for up to 6 months or exclusively breastfed was 61.45% (Indonesia Ministry of Health, 2018). The highest percentage of exclusive breastfeeding occurred in Sleman Regency and the lowest occurred in Yogyakarta City (Yogyakarta Provincial Health Office, 2017).

According to the Indonesian government regulation number 33 of 2012, health workers and health service providers are required to provide information and education about exclusive breastfeeding to mothers or baby's family members from pregnancy until the end of the exclusive breastfeeding period.

However, providing the best breastfeeding practices with exclusive breastfeeding is not easy and extra effort from the mother is needed. Mothers' knowledge about infant feeding in the community still varies, therefore to make it easier to categorize, the World Health Organization (WHO) defines infant feeding practices as follows: 1) exclusive breastfeeding means babies are only given breast milk, but it can still be called exclusive breastfeeding if the babies are in special conditions and must be administered oral rehydration solution (ORS), and drops or syrups (vitamins, minerals, medicines), 2) predominant breastfeeding is when babies are given breast milk along with other liquid nutritional sources such as water, water-based drinks, fruit juices, ORS, and drops or syrups (vitamins, minerals, medicines), 3) breastfeeding with complementary foods is when babies are given breast milk and are accompanied by solid and semi-solid foods or liquids which include formula milk, and 4) breastfeeding is when babies are given breast milk with food or fluids including formula milk (WHO, 2007).

There are several factors that can affect the implementation of exclusive breastfeeding, including: knowledge about exclusive breastfeeding, children's age, and mother's education level (Mogre et al., 2016). Other factors are access to information, family support, parity and type of delivery, previous breastfeeding experience, and mother's

employment status (Ketbi et al., 2018 and Mensah et al., 2017). Based on these data, the researchers of this study were interested in determining the practice of infant feeding and identifying the factors that influence the practice of exclusive breastfeeding in the Yogyakarta area of Indonesia.

METHOD

This is a descriptive analytical study with a cross-sectional approach and was conducted from June 2019 to April 2020. This study was conducted in Sleman Regency because this regency has the highest breastfeeding coverage in Yogyakarta Province. The research used cluster random sampling to select 10 public health centers (*puskesmas*) out of 25 health centers in Sleman Regency for this study.

Based on data DIY Province Health profile 2017, the number of babies in Yogyakarta Province was 28,208 babies, and the number of babies in Sleman Regency was 8,420 babies. By extrapolation, this data can provide an estimate of the number of babies in Sleman Regency in 2019. Based on the Slovin formula, the minimum number of samples needed for this study was 401 samples. The number of samples that was used in this study was 421 samples. Data collection was done in each *puskesmas* when the infant immunization service was taking place. Research subjects were selected based on our inclusion and exclusion criteria. This research's inclusion criteria were mothers who have babies aged less than 7 months, are willing to be research respondents, and can read, write, and communicate well. The exclusion criteria for this study were mothers who had mental disorders and mothers who did not live with their babies and did not breastfeed their babies.

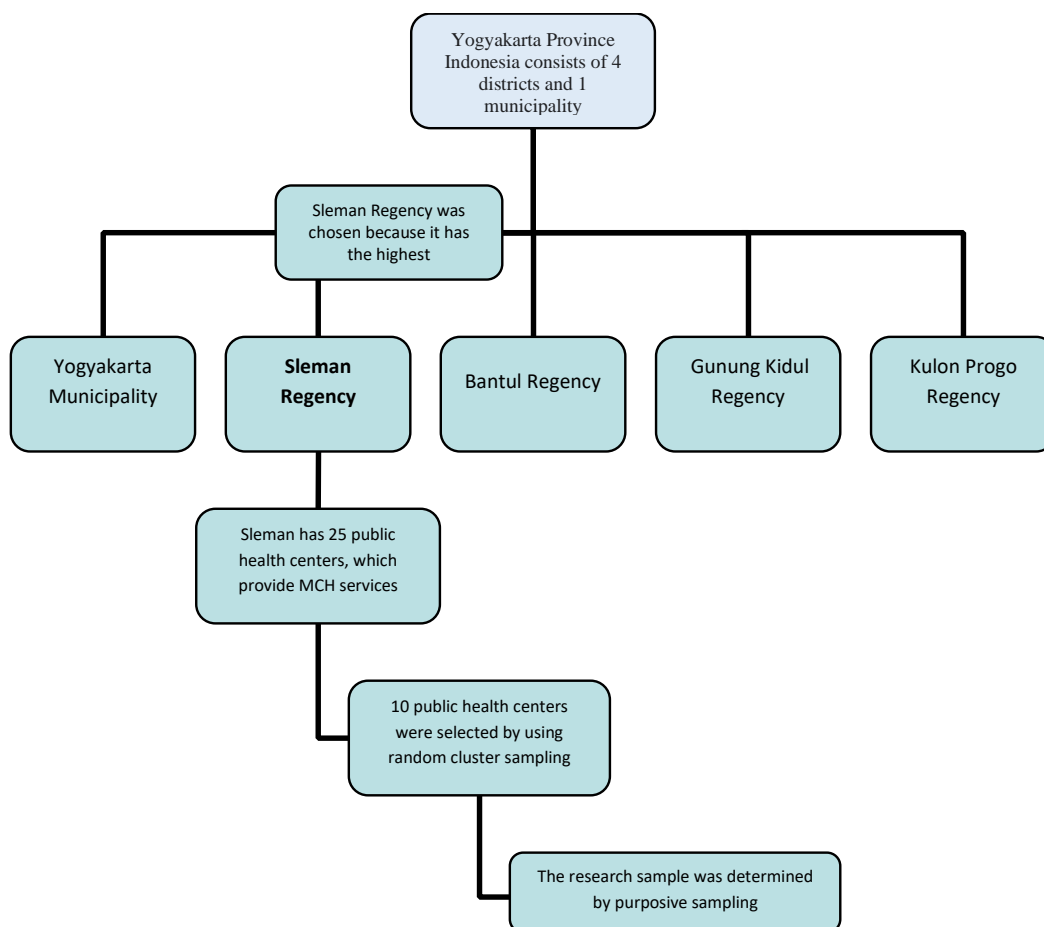


Figure 1. Sampling Technique

The instruments that have been used in this study were the demographic data questionnaire, the Iowa Infant Feeding Attitude Scale (IIFAS) questionnaire, and the Breastfeeding Self Efficacy Scale-Short Form (BSES-SF) questionnaire. This questionnaire has been translated and back translated, and it has also been declared valid and reliable. The mothers filled the questionnaire with the help of a research assistant because most of the mothers came to the *puskesmas* with their babies. Univariate analysis was done using percentage, mean, median, standard deviation (SD), and minimum maximum data, while analysis of the relationships between variables was conducted using chi-square and point biserial correlation tests with multivariate logistic regression analysis.

RESULTS

Table 1 shows the characteristics of the respondents, with most of the respondents being in the age range of 20-35

years. Most of the babies are less than 6 months old, while most of the mothers have low and middle education and are not working outside the home (housewife). The household income of some respondents is greater than the regional minimum wage in Sleman Regency. For parity, more than half of the respondents are multiparous with the previous number of children being mostly one child. The type of delivery for most mothers (64.3%) was normal birth and some gave birth by cesarean delivery. The majority of the respondents also had previous breastfeeding experience and 84.8% had received health education about breastfeeding. Almost all respondents received social support from their husbands or families regarding breastfeeding. Most of the respondents received information about breastfeeding from health workers and health cadres, while others received information from friends, family members, as well as mass and electronic media.

Table 1. Respondents' Characteristics (n=421)

Characteristics of respondents	n	%
Mother's age (years)		
Health reproduction (20-35)	341	81.0
Young reproduction (<20) dan old (>35)	80	19.0
Infant's age		
<6 month	368	87.4
≥6 month	53	12.6
Mother's last education		
Low and secondary education	403	95.7
Higher education	18	4.3
Employment status		
Work	120	28,5
Does not work (housewife)	301	71,5
Household income		
≥ Regional Minimum Wage Sleman	283	67.2
< Regional Minimum Wage Sleman	138	32.9
Parity		
Primipara	178	42.3
Multipara	243	57.7
The number of children before		
1 child	343	81.5
2 children	78	18.5
Type of delivery		
Normal	270	64.1
Sectio Caesarea	151	35.9
Previous breastfeeding experience		
Ever	244	58.0
Never	177	42.0
Experience getting information about breastfeeding		
Ever	357	84.8
Never	64	15.2
Social support		
Yes	399	94.8
No	22	5.2
Sources of information about breastfeeding		
Family (husband, parent)	75	12.5
Health workers	288	47.9
Health cadres	104	17.3
Friends	39	6.5
Media (TV, radio, magazine, internet, advertisements, movie, books, leaflets, newspapers, etc.)	95	15.8

Table 2. Infant Feeding Practices (n=421)

Infant feeding practices	n	%
Breastfeeding status (n=421)		
Exclusive	347	82.4
Not exclusive	74	17.6
For all babies (n=421)		
Exclusive breastfeeding	347	82.4
Predominant breastfeeding	63	15.0
Complementary breastfeeding	11	2.6
For babies less than 6 months (n=368)		
Exclusive breastfeeding	303	82.3
Predominant breastfeeding	57	15.5
Complementary breastfeeding	8	2.2
For babies more than 6 months (n=53)		
Exclusive breastfeeding	44	83
Predominant breastfeeding	6	11
Complementary breastfeeding	3	5

Based on data from Table 2 about infant feeding practices, the breastfeeding status showed that most babies (82.4%) received exclusive breastfeeding, while some babies (17.6%) did not receive exclusive breastfeeding, 15% received predominant breastfeeding, and 2.6% received

complementary breastfeeding. If the feeding practices were divided into age ranges of less than 6 months and more than 6 months, above 80% of infants were exclusively breastfed in both groups.

Table 3. Correlation of Factors Influencing Infant Feeding Practices (n=421)

Characteristic respondents	Breastfeeding status		Total (n=421)	P value	OR	95%CI
	Exclusive breastfeeding (n=347) n (%)	Not exclusive breastfeeding (n=74) n (%)				
Mother's last education				1.000	0.935	0.264-3.316
Low and secondary education	245 (81.9)	54 (18.1)	299			
Higher education	101 (83.4)	20 (16.6)	121			
Mother's Age (years)				0,426	1.344	0.733-2.466
Health reproduction (20-35)	284(83.3)	57(16.7)	341			
Young (<20) and old (>35) reproduction	63(78.8)	17(21.2)	80			
Infant's age				1.000	0.953	0.443-2.050
<6 month	303(82.3)	65(17.7)	368			
≥6 month	44(83.0)	9 (17.0)	53			
Employment status				0,008	0.478	0.284-0.806
Work	89(74.2)	31(25.8)	120			
Does not work (housewife)	258(85.7)	43(14.3)	301			
Household income				1.000	0.981	0.574-1.676
≥ Regional Minimum Wage Sleman	233 (82.3)	50 (17.7)	283			
< Regional Minimum Wage Sleman	114(82.6)	24 (17.4)	138			
Type of delivery				0.991	0.962	0.569-1.627
Normal	222(82.2)	48(17.8)	270			
Sectio Caesarea	125(82.8)	26(17.2)	151			
The number of children before				0.945	0.925	0.479-1.783
1 child	282(82.2)	61(17.8)	343			
2 children	65(83.3)	13(16.7)	78			
Parity				0,062	0.600	0.362-0.993
Primipara	139 (78.1)	39 (21.9)	178			
Multipara	208 (85.6)	35 (14.4)	243			
Previous breastfeeding experience				0,255	1.384	0.836-2.290
Ever	206 (84.4)	38 (15.6)	244			
Never	141 (79.7)	36 (20.3)	177			
Experience getting information about breastfeeding				0,929	1.098	0.554-2.178
Ever	295 (82.6)	62 (17.4)	357			
Never	52 (81.2)	12 (18.8)	64			

Characteristic respondents	Breastfeeding status		Total (n=421)	P value	OR	95%CI
	Exclusive breastfeeding (n=347) n (%)	Not exclusive breastfeeding (n=74) n (%)				
Social support				0.833	0.729	0.210-2.532
Yes	328(82.2)	71(17.8)	399			
No	19(86.4)	3(13.6)	22			
	Mean (SD)	Mean (SD)		p value	rpb	
Mother's age	29.35 (5.68)	29.68 (6.33)		0.655	0.022	
Knowledge about breastfeeding	13.93(1.06)	13.66 (0.94)		0.045	-0.098	
Mothers' attitude about exclusive breastfeeding	60.38(4.85)	58.83(4.85)		0.013	-0.121	
Breastfeeding self-efficacy	56.04(5.07)	51.89(7.21)		0.000	-0.277	

Based on Table 3, employment status, maternal knowledge, maternal attitudes, and breastfeeding self-efficacy have a significant correlation with exclusive breastfeeding. While other factors such as the mother's last education level, age, infant's age, family income, type of delivery, number of previous children, parity status, breastfeeding experience, experience of getting health education, and family support,

did not correlate with exclusive breastfeeding. For the multivariate analysis, bivariate test results were selected with a *p* value of <0.25, from this the factors employment status, parity status, knowledge, attitudes, and self-efficacy were found. The multivariate test was conducted by selecting the enter method.

Table 4. Multivariate Analysis

Variable	Model 1			
	Coef (B)	t	p-value	SE
(constant)	3.204	8.890	0.000	0.360
Parity	-0.070	-1.938	0.053	0.036
Employment status	-0.112	-2.846	0.005	0.039
Knowledge about breastfeeding	-0.029	-1.709	0.088	0.017
Mother's Attitude about exclusive breastfeeding	-0.006	-1.701	0.090	0.004
Breastfeeding self- efficacy	-0.017	-5.322	0.000	0.003
F value	10.808			
R square	0.115			
P value	0.000			

Based on Table 4, breastfeeding self-efficacy and employment status have a dominant influence on the implementation of exclusive breastfeeding, and together with parity, knowledge about breastfeeding, mother's attitudes about exclusive breastfeeding, and breastfeeding self-efficacy contribute to the implementation of exclusive breastfeeding by 11.5%, and the remaining are influenced by other factors that were not examined in this study.

DISCUSSION

Based on the results of this study, it can be concluded that the rate of exclusive breastfeeding reached 82.4% for all babies, where the rate of exclusive breastfeeding for babies aged less than 6 months was 82.3%, and for babies over 6 months was 83%. The rate for exclusive breastfeeding has decreased when compared to the rate for exclusive breastfeeding in Yogyakarta Province in 2017, which was 87.43%. The implementation rate for exclusive breastfeeding is much higher when compared to the national level of exclusively breastfed (EBF) infants in 2017, which was 61.33%. The highest achievement rate in Indonesia is in the West Nusa Tenggara Province, namely, 87.35% (Indonesia Ministry of Health, 2018).

The high EBF achievement rate is also similar to the results of a study by Morais et al. (2017) in 11 cities in Brazil, which found that 81.7% of babies were breastfed for up to 6 months. A fairly high achievement of exclusive breastfeeding in Mashhad, Iran, reached 73.8% (Hoseini et al., 2014).

However, there are many notable places where the EBF achievement is still very low: the prevalence of EBF in the Burao District of Somalia is 20.4% (Jama et al., 2020), 20.9% in South Jordan (Altamimi et al., 2017), 16.9% in Abu Dhabi, United Arab Emirates (Ketbi et al., 2018), and the EBF prevalence was only 24.1% in the Muheza District of Tanga in Northeastern Tanzania (Maonga et al., 2016). Moreover, EBF practice was 33.5% in Nnewi South-East Nigeria (Onah et al., 2014) and 34% in Tamil Nadu (Radhakrishnan and Balamuruga, 2012).

The causes of low EBF achievement are due to low maternal nutrition, pressure from mothers to return to work after maternity leave, low knowledge of breastfeeding, perceptions of lack of breast milk produced, and conflicting advice from families and health workers (Mgongo et al., 2018). In addition, the low achievement of EBF is also caused by the mothers' perception, especially mothers who work outside the home, who believe that formula milk is better than breast milk (Wambach et al., 2016). The lack of implementation or failure of EBF is related to the formal education of mothers, low family income, lack of advice on breastfeeding since pregnancy, and lack of support from husbands (Jama et al., 2020). Mothers who have had a good level of formal education had greater access to information, including information about EBF. Low family income, lack of advice on breastfeeding since pregnancy, and lack of support from husbands are some of the factors that can hinder the achievement of exclusive breastfeeding. Therefore, extra preparation needs to be done.

The mother's employment status influences EBF (p value 0.008), since mothers who do not work have a greater likelihood of being able to provide exclusive breastfeeding compared with working mothers. The results of this study are also in line with the research of Mensah et al. (2017) which found that mothers who work in the public and private sectors are less likely to achieve EBF compared to mothers who are self-employed. The reason is because mothers who are self-employed can better manage their work schedules and breastfeeding schedules. This is also consistent with the situation in Sleman, Yogyakarta, Indonesia, where most mothers who do not work outside the home or are housewives have a more flexible time to do household chores and breastfeed their babies, making it easier to implement EBF. Conversely, the results of the research by Mundagowa et al. (2019) stated that the work status of mothers is not related to EBF, although there is a greater proportion of mothers who do not work that implement EBF.

The next factor that affects exclusive breastfeeding is maternal knowledge. The mother's knowledge is related to EBF (p value 0.045). Ketbi et al. (2018) and Mensah et al. (2017) have also found that there is a relationship between the mother's knowledge and EBF. This is also in line with the study of Susiloretni et al. (2015) which found that mothers' high knowledge about breastfeeding is related to the duration of breastfeeding.

Moreover, the role of health workers in providing health education about breastfeeding is essential. According to a study from Turkey, health workers' knowledge about breastfeeding is still low, and this has an impact on the low percentage of recommendations for EBF from health workers to breastfeeding mothers (Artantas et al., 2016). In addition, it is necessary to think about increasing the knowledge of breastfeeding mothers by providing special health education programs such as through training sessions. This has been done by previous research and showed positive results as mothers who received training about breastfeeding increased their maternal self-efficacy and are also expected to improve their EBF practice (Nursan et al., 2014).

The following factor is the attitude about EBF, as measured by the IIFAS. Based on the results of the study, the average score of attitudes about EBF in the group that can implement EBF was 60.38, while the group that cannot implement EBF was 58.83. There was a correlation between attitude and EBF (p value 0.013). The same finding was also conveyed in research on positive attitudes about EBF which was also shown by most of the research respondents (71.0%) in a study conducted by Onah et al. (2014) in Southeast Nigeria. Additionally, Altamimi et al. (2017) stated that participants who have good knowledge about breastfeeding will also have positive attitudes about breastfeeding.

The self-efficacy of breastfeeding mothers also influences EBF (p value 0.00). This indicates that the higher the mothers' self-efficacy for breastfeeding and providing exclusive breastfeeding, the higher the success of exclusive breastfeeding. According to the research by Shariat et al. (2018), teaching about self-efficacy and providing information and awareness about breastfeeding and psychological interventions will have a beneficial effect on EBF and are effective in improving long-term breastfeeding practices. Nursan et al. (2014) showed that breastfeeding self-efficacy is still low in mothers who have no previous experience of breastfeeding, so they need additional support from health workers. Moreover, based on Bandura's theory of social learning theory, self-efficacy is an individual's cognitive

process that can predict health behavior. By applying the self-efficacy theory as a framework for maternal trust, research showed that self-efficacy expectations can influence women's judgment about their ability to initiate, survive, and continue breastfeeding (Dennis, 1999).

The variables of previous breastfeeding experience and the experience of obtaining health education about breastfeeding were not related to EBF because both variables did not reflect the mothers' intention to breastfeed and did not have an impact on the length of the breastfeeding process (Susiloretni et al., 2015).

The parity status in this study differs from the results of previous studies which stated that EBF implementation is higher for multiparous women than that of primiparous women. The experience of having previous children can become a lesson for women to implement exclusive breastfeeding. The same opinion was also conveyed by a study conducted by Ihudiebube-Splendor (2019) which stated that primiparous mothers have low knowledge and intentions for EBF. In this study, 57.8% of primiparous women have inadequate knowledge of EBF and only 62.7% of primiparous women have the intention to provide exclusive breastfeeding. The multivariate analysis results showed that mothers' employment status and self-efficacy have a partial effect on the implementation of exclusive breastfeeding, and together with the factors of parity, knowledge, attitude, and self-efficacy, contribute to the achievement of exclusive breastfeeding by 11.5%. The remainder was influenced by other factors that were not identified in this study.

When breastfeeding mothers have returned to work, it will be more difficult to exclusively breastfeed because mothers cannot always be with their babies. High maternal self-efficacy is needed to achieve this. Additional efforts that need to be made by working mothers are expressing breast milk, storing breast milk, and giving breast milk to their infants with certain techniques when they go to work. Moreover, breastfeeding must be supported by another family member or babysitter. This may affect the implementation of exclusive breastfeeding and has not been investigated in this study.

CONCLUSION AND RECOMMENDATION

Infant feeding practice for all infants aged 1-6 months was 82.4%, for infants less than 6 months it was 82.3%, and for infants more than 6 months, 83% of the respondents' infants were exclusively breastfed. Employment status, knowledge, mothers' attitudes, and self-efficacy about breastfeeding have a significant correlation with exclusive breastfeeding, while other factors did not have a correlation with the implementation of exclusive breastfeeding. Mother's employment status and breastfeeding self-efficacy are the dominant factors that influence the implementation of exclusive breastfeeding, along with other factors such as parity, knowledge, and attitudes, which contribute to the implementation of exclusive breastfeeding by 11.5%, while the remainder are influenced by other factors that were not examined in this study.

ACKNOWLEDGMENT

This research was supported by a research grant from the Faculty of Medicine, Universitas Gadjah Mada.

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