Determinants of Exclusive Breastfeeding: Analysis of 2017 Indonesian Demographic and Health Survey Data

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Abstract- Every mother is expected to be able to provide exclusive breastfeeding to her baby for 6 months, however, the coverage of exclusive breastfeeding in Indonesia in 2017 is only 52%, this is far from the National target of 80%. This study aims to determine the determinants of exclusive breastfeeding in Indonesia. This study uses secondary data, namely data on the Indonesian Demographic and Health Survey (IDHS) in 2017 with a cross sectional design. The sample in this study were infants born two years before the survey, born alive and the last child, and aged 0-6 months with a sample of 6,872. The analysis in this study used multiple logistic regression. The results showed that maternal age, socioeconomic, residence, parity, and behavior of initiation of early breastfeeding were determinants of exclusive breastfeeding. Mother's age affects exclusive breastfeeding but when viewed from the odds ratio, exclusive breastfeeding decreases with increasing age group of mothers. Likewise with the socio-economic level, mothers with lower socioeconomic levels are more likely to have exclusive breastfeeding than mothers with higher economic status. Mothers living in urban areas tend to provide exclusive breastfeeding compared to mothers living in cities. Mothers with parity 1 have a possibility of 1,436 times for exclusive breastfeeding compared to mothers with parity >1. The lower the mother's parity rate, the higher the chance to give exclusive breastfeeding to her baby. Early initiation of breastfeeding becomes a variable with the highest influence on exclusive breastfeeding (OR = 4,451).

Keywords : Exclusive, breastfeeding, initiation, IDHS, determinants

INTRODUCTION

Directly or indirectly, malnutrition is responsible for the deaths of children under five throughout the world. The amount is around 60% from 10.9 million each year. More than two-thirds of these deaths, which are often associated with improper feeding practices, occur during the first year of life[1]. Globally, no more than 35% of babies are exclusively breastfed during the first four months of life1. The results of a study conducted by Black, et al in 2008 showed that Exclusive Breastfeeding can reduce the risk of infant mortality by 12%[2]. The results of the Indonesian Demographic and Health Survey (IDHS) showed a decline in the coverage of exclusive breastfeeding in 1997 which was originally 40.2% to 39.5% in 2003 and then declined again in 2007 to 32.9%. In 2012 the coverage of exclusive breastfeeding breastfeeding increased to 42% then in 2017 it increased again to 52%. Although there was an increase in the two survey periods, this was still far from the Ministry of Health's target of 80% of the total coverage of Exclusive ASI prepared in 2014[3].

METHOD

This study uses secondary data, namely the Indonesian Demographic and Health Survey (IDHS) data for 2017. The 2017 IDHS is a national survey with 49,250 households as respondents with 59,100 female respondents of childbearing age (WUS) aged 15-49 years. The 2017 IDHS data can be downloaded freely on the Demographic and Helath Survey (DHS) website at www.measuredhs.com. Before downloading the IDHS data, the author is asked to register to gain access to the database.

The population in this study were infants aged 0-6 months. The inclusion criteria are live-born children who are the last child, not twins and live with their mothers. Respondents who did not answer and answer did not know that they were included in the missing category and were not included in the analysis. The sample size obtained in this study was 6,723 babies.

The dependent variable in this study is exclusive breastfeeding obtained from information on feeding history in the last 24 hours and not given prelactals in children aged 0-6 months. Independent variables were socio-demographic factors (mother's age, child sex, mother's education, mother's occupation, socio-economic, and residence) as well as pre- and post-natal factors which consisted of parity, delivery method, place of delivery, pregnancy examination, and initiation of early breastfeeding.

The mother's age in this study was divided into 7 groups, namely 15-19 years, 20-24 years, 25-29 years, 30-34 years, 35-39 years, 40-44 years, and 45-49 years. The sex of children is divided into two groups, namely men and women. Mother's education was divided into six groups, they did not finish school, did not finish elementary school, graduated from elementary school, did not park high school,

graduated from high school, and had a college. Mother's work is divided into two groups: work and not work. Socio-economic is divided into five groups, namely Terbawah, middle to lower, middle, middle to upper, and top. Whereas the residence is divided into two groups, namely rural and urban areas.

The parity in this study is the number of children practiced by the mother, in this study, parity was made into four groups, namely 1, 2, 3, and more than 3. The method of delivery is the method of giving birth, divided into two groups, namely normal delivery and caesarean delivery. The place of delivery category was divided into two groups, the first was the First Level Health Facility (FLHF) while the second was the Advanced Health Facility (AHF). Prenatal care is divided into three groups, first according to K4 if the prenatal check is done at least 4 times (K4 in the first trimester at least 1 time, trimester II at least 1 time, and trimester III at least 2 times), the second is not appropriate K4 if the examination is not appropriate with K4 requirements, and the last does not carry out a pregnancy checkup. Last Initiation of Early Breastfeeding (EBF), said EBF if the child is given ASI immediately, no more than one hour after birth.

All the above variables were analyzed using STATA version 14. The analysis carried out was Bivariate analysis using logistic regression with a significance of 5% and 95% confidence interval (C95% CI), so that the determinants of exclusive breastfeeding could be obtained.

RESULT AND FINDINGS

Bivariate analysis on socio-demographic factors showed that maternal age, maternal education, family socio-economic, and residence had a relationship (<0.05) to exclusive breastfeeding (table 1). In table 2, it can be seen that the pre / post-natal factors that have a relationship include parity, type of labor, place of birth, socio-economic, and residence.

Table 1. Bivariate analysis of the relationship between socio-demographic factors for exclusive breastfeeding in 0-6 months infants in Indonesia, IDHS 2017

Variable	Exclusive Breastfeeding				Odds Ratio	95% CI	p-value
	No	%	Yes	%			
Mother's Age:							
15 - 19 years	100	34,72	188	65,28	Reference		
20 - 24 years	567	44,16	717	55,84	0,681	0.475-0,977	0.037
25 - 29 years	758	42,39	1.030	57,61	0,745	0.520-1,067	0.109
30 - 34 years	744	43,48	967	56,52	0,736	0.515-1,051	0.092
35 - 39 years	505	43,13	666	56,87	0,747	0.519-1,075	0.117
40 - 44 years	199	47,38	221	52,62	0,725	0.480-1,097	0.129
45 - 49 years	29	47,54	32	52,46	0,924	0.466-1,832	0.822
Ex of child :							
Male	1.485	43,27	1.947	56,73	Reference		
Female	1.417	43,06	1.874	56,94	1,003	0,889-1,131	0,959
Mother's Educatione :							
Not school	22	28,95	54	71,05	Reference		
Not Finished Elementery School	155	39,04	242	60,96	0,485	0,243-0,966	0,040
Finished Elementery School	472	42,07	650	57,93	0,524	0,271-1,013	0,055
Not Finished Junior High School	736	41,49	1.038	58,51	0,554	0,288-1,067	0,078
Finished Senior High School	919	45,27	1.111	54,73	0,430	0,223-0,829	0,012
College	598	45,17	726	54,83	0,468	0,241-0,909	0,025
Job status :							
Work	1.654	42,57	2.231	57,43	Reference		
Ot work	1,248	43,97	1.590	56,03	0,938	0,828-1,063	0,318
Socio-economy :							
Poor	694	39,14	1.079	60,86	Reference		
Middle to low	598	44,49	746	55,51	0,858	0,715-1,029	0,100
Middle	567	45,36	683	54,64	0,783	0,643-0,955	0,016
Middle to high	540	44,93	662	55,07	0,827	0,683-1,002	0,503
Rich	503	43,59	651	56,41	0,902	0,736-1,105	0,320
Residence :							
Rural	1.479	43,73	1.903	56,27	Reference		
Urban	1.423	42,59	1.918	57,41	1,13	0,991-1,296	0,067

Table 2. Bivariate analysis of the relationship of pre / post-natal factors to exclusive breastfeeding in children 0-6 months in Indonesia, IDHS 2017

Variable	Exclusive Breastfeeding				Odds Ratio	95% CI	p-value
	No	%	Yes	%			
Parity :							
1	1.024	47,06	1.152	52,94	Reference		
2	906	40,48	1.332	59,52	1,389	1,200-1,607	0,001
3	544	41,75	759	58,52	1,351	1,142-1,600	0,001
>3	428	42,54	578	57,46	1,178	0,961-1,445	0,114
Ype of Delivery :							
Normal	2.228	40,41	3.286	59,59	Reference		
Caesar	674	55,75	535	44,25	0,587	0,500-0,690	0,001
Place of Delivery :							
First Level Health Facilities (FLHF)	1.033	39,34	1.593	60,66	Reference		
Advanced Health Facilities (AHF)	1.133	48,07	1.224	51,93	0,700	0,606-0,809	0,001
Antenatal Care :							
According to K4	2.585	43,39	3.373	56,61	Reference		
Not according to K4	235	44,09	298	55,91	0,898	0,710-1,136	0,371
No Antenatal Care	82	35,34	150	64,66	1,446	0,993-2,106	0,993
Initiation of early breastfeeding:							
No	1.557	66,14	797	33,86	Reference		
Yes	1.345	30,79	3.024	69,21	4,702	4,109-5,380	0,001

In the multivariate analysis process, all variables analyzed at bivariate were selected provided that the variables with p-value <0.25 will be included in multivariate analysis. The variables included in multivariate candidates are maternal age, maternal education, family socioeconomic status, place of residence, parity, type of delivery, place of birth, and IMD. The results of multiple logistic regression analysis indicate that the variables that influence exclusive breastfeeding are maternal age, socioeconomic, residence, and IMD Table 3). The results of the analysis showed that mothers with age groups under 45 years affected exclusive breastfeeding compared to the age group 45 years and over (OR = 0.571). Mothers with lower socio-economic groups are more likely to have exclusive breastfeeding compared to other economic groups (OR = reference). Mothers who live in urban areas may have 1,237 times for exclusive breastfeeding compared to mothers living in rural areas (OR = 1,237). Mothers with parity 1 had a possibility of 1,436 times for exclusive breastfeeding compared to mothers with parity> 1 (OR = 1,436). This means that the lower the parity, the higher the chance of exclusive breastfeeding. Finally, mothers who initiate early breastfeeding in their babies have a possible 4,451 times for exclusive breastfeeding compared to mothers who did not initiate early breastfeeding (OR = 4,451).

Table 3. Multivariate analysis of determinants of exclusive breastfeeding in children 0-6 months in Indonesia, IDHS 2017.

Variabel	Odds Ratio	95% CI	p-value
Mother's Age:			
15 - 19 years	Reference		
20 - 24 years	0,571	0,388-0,841	0,005
25 - 29 years	0,532	0,356-0,794	0,002
30 - 34 years	0,470	0,312-0,710	0,001
35 - 39 years	0,449	0,290-0,695	0,001
40 - 44 years	0,476	0,289-0,783	0,004
45 - 49 years	0,532	0,243-1,162	0,114
Socio-economy :			
Poor	Reference		
Middle to low	0,780	0,634-0,961	0,020
Middle	0,722	0,573-0,910	0,006

Variabel	Odds Ratio	95% CI	p-value
Middle to high	0,795	0,626-1,010	0,061
Rich	0,846	0,649-1,104	0,220
Residence :			
Rural	Reference		
Urban	1,237	1,055-1,452	0,009
Parity :			
1	Reference		
2	1,436	1,193-1,730	0,001
3	1,395	1,104-1,763	0,005
>3	1,251	0,945-1,654	0,116
Initiation of early breastfeeding:			
No	Reference		
Yes	4,451	3,873-5,115	0,001

DISCUSSION

Mothers with age groups 44 years and under affected exclusive breastfeeding activities compared to the age group 45 years and over (OR = 0.571). This is in line with the research conducted by [4] where all age groups of mothers are related to exclusive breastfeeding. This is due to the fact that mothers gain experience in the management of children as they age. Mothers with lower socio-economic groups are more likely to have exclusive breastfeeding compared to other economic groups (OR = reference). This is in line with the research conducted by [5] where socioeconomic status influences exclusive breastfeeding. Mothers who live in cities are more likely to give exclusive breastfeeding compared to mothers who live in rural areas. This is contrary to the research conducted by [6] and [7] where there is no difference between the location of residence and both in rural and urban areas. The lower the parity number, the higher the chance to eat. This research was conducted by [8]. Parity levels have determined much attention in maternal and child health. This is said because there is a tendency for high-health maternal health to be better than for low-density mothers [9]. Early breastfeeding initiatives have a significant influence on exclusive breastfeeding, this is in line with the research conducted by [10].

CONCLUSIONS

Mother's age, socio-economic, place of residence, parity, and initiation of accepting early is a determining factor for exclusive breastfeeding. The age of the mother who supports exclusive breastfeeding when viewed from the odds ratio, exclusive breastfeeding is increasing according to the increase in the group of older mothers. Likewise with the socio-economic level, mothers with lower socio-economic levels are more likely to free exclusively mothers with higher economic status. Mothers living in urban areas must provide mothers who live in cities. The lower the mother's parity rate, the higher the chance to give exclusive breastfeeding to her baby. Early initiation of hunting becomes the variable with the highest ratio of exclusive breastfeeding.

SUGGESTION

The need for special efforts so that mothers can increase knowledge about the initiation of early breastfeeding so that the practice of early breastfeeding is expected to increase the rate of exclusive breastfeeding.

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