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Early Breastfeeding Initiation Among Indonesian Women Aged 15–49: Evidence From the 2023 Health Survey

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Abstract

Early Breastfeeding Initiation (EBI) achievement globally has only reached 48%, with the target is 70% by 2030. Thus, there is still a 22% gap from the expected target. Although national coverage targets have been achieved in Indonesia, there are still some disparities in maternal characteristics, socioeconomic conditions, and access to maternal health services suggest the presence of underlying determinants that have not been fully explored at the national level. This study aimed to identify factors associated with the practice of EIBF among women of reproductive age in Indonesia. This study uses secondary data of individuals and toddlers SKI 2023 obtained from the Data Center of the Ministry of Health of the Republic of Indonesia, using 14,030 respondents' data, who were selected based on the completeness of the data and did not have damaged data on the research variables. Chi-Square test was used with a significance level of α = 0.05 and a 95% confidence interval (CI 95%), while multivariate analysis was carried out using the Backward Likelihood Ratio (Backward LR) logistic regression test. The results of the study showed that the type of residential area (PR = 1.044; 95% CI = 1.013-1.077), maternal education level (PR = 0.920; 95% CI = 0.892-0.948), economic status (PR = 0.935; 95% CI = 0.906-0.964), parity (PR = 1.068; 95% CI = 1.024-1.114), ANC frequency (PR=0.958; 95% CI= 0.929-0.989), delivery method (PR=1.597; 95% CI= 1.597-1.745), place of delivery (OR= 1.167; 95% CI=1.021-1.335), and birth weight (PR= 1.265; 95% CI= 1.188-1.348) were associated with EBI practices in WUS in Indonesia. While maternal employment status was not associated with EBI practices in WUS in Indonesia. The variables of place of delivery and birth weight were proven to be confounded by the parity variable. The Indonesian Ministry of Health's Data Center is advised to add data related to the mother's age at birth. Women of childbearing age are advised to give birth in health facilities because they have a greater opportunity to practice EBI.

Introduction

Early Breastfeeding Initiation (EBI) is a breastfeeding process that begins within the first hour after the baby is born, where the baby is placed on the mother's chest/abdomen without any disturbance *(skin-to-skin contact)* and is allowed to naturally find the nipple and breastfeed on its own *(self-latch)* (WHO, 2009). EBI is an important step that provides early protection against death and disease, as well as being a long-term investment in children's growth and development, both physically, cognitively, and socially (Aprillia *et al*., 2024; Kasmita *et al*., 2023). EBI has been proven to contribute in reducing morbidity and mortality in infant, and increasing intelligence as well as educational achievement of children in the future. In the context of sustainable development. EBI also plays a role in reducing social inequality by providing a more equal

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start to life for every child (Hansen, 2016).

WHO and UNICEF set up a 70% EBI coverage target by 2030 as part of the Global Nutrition Targets (Headey *et al*., 2020). However, based on the 2021 *Global Breastfeeding Scorecard*, EBI achievement globally has only reached 48%, which shows that there is still a gap of 22% from the expected target (Headey *et al*., 2020). Indonesia also targets EBI in 2023 at 66% (Ministry of Health of the Republic of Indonesia, 2024). Based on the 2023 Indonesian Health Profile, the percentage of newborns who received EBI in 2023 nationally has reached 86.6%, exceeding the set target (Ministry of Health of the Republic of Indonesia, 2024), even though national target has been achieved, EBI practices remain important to be improved evenly in Indonesia.

Based on findings from previous studies, EBI is usually associated with economic status (Bolarinwa *et al*., 2022; Tilahun *et al*., 2016), place of birth (Adewuyi *et al*., 2017; Ezeh *et al*., 2019; Gayatri & Dasvarma, 2020), skin-to-skin contact (Armdie *et al*., 2024; Sarfo *et al*., 2024), delivery method (A. E. Ahmed & Salih, 2019; Lyellu *et al*., 2020), knowledge level regarding EBI (Faraj *et al*., 2023), age (Boakye-Yiadom *et al*., 2021), (Yaya *et al*., 2020), frequency of ANC (K. Y. Ahmed *et al*., 2019; Harriott *et al*., 2022; Senanayake *et al*., 2019), parity (Armdie *et al*., 2024; Patel *et al*., 2015), birth attendant (Armdie *et al*., 2024; Irmawati *et al*., 2024; Ndirangu *et al*., 2018), initial cry (Armdie *et al*., 2024; Karim *et al*., 2018), post natal care (PNC) (Armdie *et al*., 2024; Farhana *et al*., 2019), birth order (John *et al*., 2019), mother's employment status (Meshram *et al*., 2024; Tilahun *et al*., 2016), mother's education level (Finnie *et al*., 2020; Hussen *et al*., 2024), type of residence (Berde & Yalcin, 2016), culture and support regarding EBI (Dina *et al*., 2021; Sistiarani *et al*., 2024; Yulidasari *et al*., 2017), and baby's weight at birth (Apanga & Kumbeni, 2021). There are studies with similar topics in Indonesia that use secondary data from Indonesia Demographic and Health Surveys 2007, 2012, and 2017 (Nurokhmah *et al*., 2023), but the study has not analyzed the probability of EBI practices in WUS in Indonesia. Many studies have shown various determinants related to EBI practices, but no research has been found in Indonesia that explores the determinants of EBI practices using secondary data from SKI 2023, where SKI 2023 data is the result of the latest secondary survey covering all regions of Indonesia in 2023. Therefore, the author has an interest in comprehensively examining the determinants of EBI practices in WUS in Indonesia using secondary data from SKI 2023.

Methods

This research is an observational, analytical, quantitative study with a cross-sectional design. The dependent variable in this research is the practice of EBI. There are nine independent variables studied, namely the type of residential area, maternal education level, maternal employment status, economic status, parity, ANC frequency, delivery method, place of delivery, and baby's weight at birth.

This study utilized secondary data of individuals and toddlers SKI 2023 obtained from the Data Center of the Indonesian Ministry of Health. The population was women of childbearing age (15–49 years) who lived in households with toddlers, totaling 86,364 respondents. The sample of this study consisted of 14,030 respondents, based on the completeness of the data, and did not have damaged data on the research variables. The sampling technique was by the total sampling method. The instrument used the documentation table of secondary data SKI 2023.

The categorization of variables in this study refers to *the cut-offs* used in previous studies so that the research results can be compared methodologically with existing findings (Ahinkorah *et al*., 2022; Bolarinwa *et al*., 2022; Meshram *et al*., 2024; Ministry of Health of the Republic of Indonesia, 2024; Sarfo *et al*., 2024; Tilahun *et al*., 2016; Yaya *et al*., 2020). The characteristics of respondents were described based on the frequency distribution and percentage of all variables studied. At the bivariate analysis stage, the Chi-Square test was used with a significance level of $\alpha = 0.05$ and a 95% confidence interval (CI 95%). Multivariate analysis was carried out using the *Backward Likelihood Ratio* (*Backward LR*) *logistic regression test*. The variable that has the most dominant relationship to the practice of EBI in WUS in

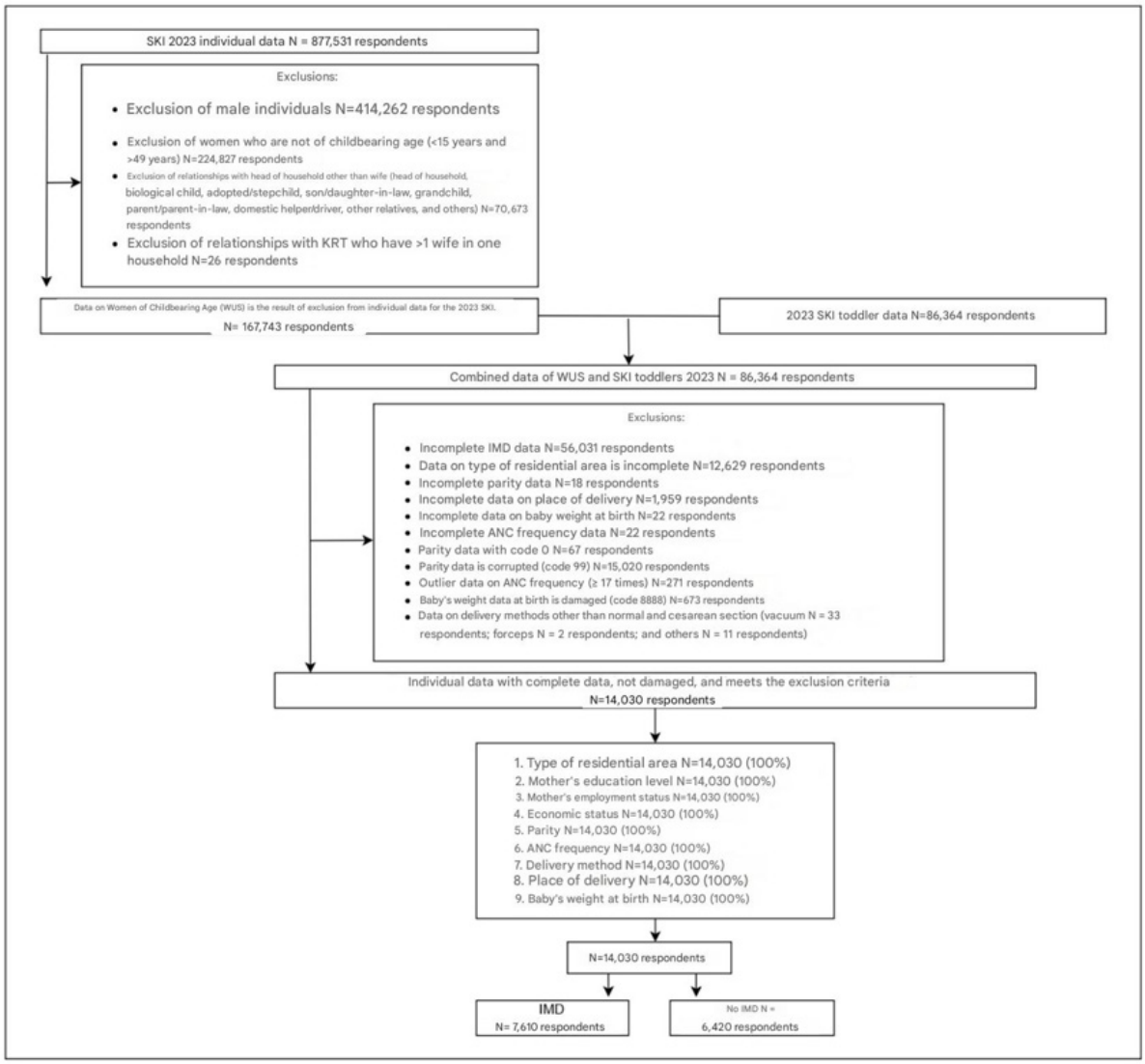

Figure 1. Sampling Flow

Indonesia is indicated by the highest Exp (B) value in the logistic regression results (Dahlan, 2016). Confounding analysis was carried out by looking at the difference in OR values between bivariate analysis and multivariate analysis; if it reaches ≥10%, then the variable is a confounding variable (VanderWeele, 2019). Furthermore, a probability analysis was also carried out to predict the practice of EBI according to the characteristics of the respondents based on the research variables.

Results and Discussion

Table 1 shows that 7,610 respondents (54.2%) practiced EBI, while 6,420 respondents (45.8%) did not. A total of 6,210 respondents (44.3%) lived in rural areas, and 7,820 other respondents (55.7%) lived in urban areas. There were 8,161 respondents (59.3%) who had a high level of education, and 5,715 respondents (40.7%) had low education. Based on employment status, 8,315 respondents (59.3%) were unemployed, and 5,715 respondents (40.7%) were employed. In the economic status variable, a total of 9,300 respondents (66.3%) had a high economic status, while 4,730 respondents (33.7%) had a low economic status.

Most respondents, namely 11,597 people (82.7%), were recorded as having two or more parities, while 2,433 respondents (17.3%) only had one parity. Based on Table 1, 8,989 respondents (64.1%) had undergone ANC six

Table 1. Respondent Characteristics Based on Research Variables (n=14030)

Variables	Frequency	Percentage (%)
Early Breastfeeding Initiation (EBI) Practices		
EBI	7610	54.2
No Early Initiation of Breastfeeding	6420	45.8
Type of Residential Area		
Rural	6210	44.3
Urban	7820	55.7
Mother's Education Level		
High	8161	59.3
Low	5715	40.7
Mother's Employment Status		
Doesn't work	8315	59.3
Work	5715	40.7
Economic Status		
High	9300	66.3
Low	4730	33.7
Parity		
≥ 2	11597	82.7
1	2433	17.3
ANC Frequency		
≥ 6 times	8989	64.1
6 times	5041	35.9
Delivery Methods		
Normal	10189	72.6
C-section	3841	27.4
Place of Delivery		
Health Facilities	13060	93.1
Non-Health Facilities	970	6.9
Baby Weight		
Normal	12713	90.6
Abnormal	1317	9.4

Primary Data (2025)

Table 2. Relationship between Respondent Characteristics and EBI Practices (14030)

Variables	EBI Practice		Total	p-value	PR (CI 95%)
	Yes (%)	No (%)			
Type of Residential Area					
Rural	3450 (55.6)	2760 (44.4)	100	0.006*	1,044
Urban	4160 (53.2)	3660 (46.8)	100		(1,013-1,077)
Mother's Education Level					
High	4271 (52.3)	3890 (47.7)	100	<0.0001**	0.920

Low	3339 (56.9)	2530 (43.1)	100		(0.892-0.948)
Mother's Employment Status					
Doesn't work	4518 (54.3)	3797 (45.7)	100	0.799	1,004
Work	3092 (54.1)	2623 (45.9)	100		(0.974-1.036)
Economic Status					
High	4928 (53.0)	4372 (47)	100	<0.0001**	0.935
Low	2682 (56.7)	2048 (43.3)	100		(0.906-0.964)
Parity					
≥ 2	6361 (54.9)	5236 (45.1)	100	0.002*	1,068
1	1249 (51.3)	1184 (48.7)	100		(1,024-1,114)
ANC Frequency					
≥ 6 times	4801 (53.4)	4188 (46.6)	100	0.009*	0.958
6 times	2809 (55.7)	2232 (44.3)	100		(0.929-0.989)
Delivery Methods					
Normal	6208 (60.9)	3981 (39.1)	100	<0.0001**	1,669
C-section	1402 (36.5)	2439 (63.5)	100		(1,597-1,745)
Place of Delivery					
Health Facilities	7055 (54)	6005 (46)	100	0.058	0.944
Non-Health Facilities	555 (57.2)	415 (42.8)	100		(0.892-0.999)
Baby's Birth Weight					
Normal	7034 (55.3)	5679 (44.7)	100	<0.0001**	1,265
Abnormal	576 (43.7)	741 (56.3)	100		(1,188-1,348)

Primary Data (2025). * = p value <0.05. ** = p value <0.0001. Significant at p-value < 0.05

times or more, while 5,041 other respondents (35.9%) had undergone ANC less than six times. Regarding delivery method, the majority of mothers gave birth normally, namely 10,189 respondents (72.6%), and 3,841 respondents (27.4%) underwent delivery by cesarean section. It was recorded that 13,060 respondents (93.1%) gave birth in health facilities and 970 respondents (6.9%) gave birth in non-health facilities. As for the variable of baby's weight at birth, mothers who gave birth to normal and abnormal weight babies were 12,713 respondents (90.6%) and 1,317 respondents, respectively (9.4%).

In Table 2, it can be seen that 7 of the 9 independent variables studied are related to the practice of EBI in Indonesia (p-value < 0.05), which include the type of residential area, maternal education level, economic status, parity, frequency of ANC, method of delivery, and baby's weight at birth. Meanwhile, 2 variables that are not related to the practice of EBI in Indonesia, because they have a p-value>0.05, are the mother's employment status and place of delivery.

In the next stage, independent variables that have a p-value <0.25 were further analyzed using multivariate logistic regression with the *Backward Likelihood Ratio (LR) selection method*. Of the nine variables, eight met these criteria, namely the type of residential area, maternal education level, economic status, parity, frequency of ANC, method of delivery, place of delivery, and birth weight of the baby. The final results of the analysis showed that only four variables remained significantly related in the final step of the *Backward LR selection*, namely parity, method of delivery, place of delivery, and birth weight of the baby. Table 3 shows that the variable with the highest *Exp (B) value* is the method of delivery, which is 2.696. This shows that the method of delivery is the factor most strongly associated with the practice of EBI in WUS in Indonesia.

Table 3. Multivariate Logistic Regression Results on EBI Practices

Variables	B	SE	Wald	p-value	*Exp (B)*	95% CI	
						Lower	Upper
Parity	0.111	0.046	5.891	0.015	1.118	1.022	1.223
Delivery Methods	0.992	0.040	618.667	<0.0001	2.696	2.494	2.916
Place of Delivery	0.155	0.068	5.111	0.024	1.167	1.021	1.335
Baby's Weight at Birth	0.344	0.060	32.750	<0.0001	1.410	1.254	1.587
Constant	-1.097	0.100	121.207	<0.0001	0.334		

Table 4. Results of Confounding Variable Analysis

Variables	p-value Bivariate	COR (95% CI)		Adj OR (95% CI)	Conclusion
Parity	0.002*	1.152 (1.055-1.257)	0.015*	1.118 (1.022-1.223)	Difference 2.95%
Delivery method	<0.0001*	2.713 (2.512-2.929)	<0.0001*	2.696 (2.494-2.916)	Difference 0.62%
Place of delivery	0.058	0.878 (0.770-1.002)	0.024*	1.167 (1.021-1.335)	**It is significant and there is a difference of 32.91%**
Baby's weight at birth	<0.0001*	1.593 (1.421-1.786)	<0.0001*	1.41 (1.254-1.587)	**Difference 11.48%**

Primary Data (2025). * p-value <0.05

The confounding analysis in this study was conducted by comparing the estimated changes between *the Crude Odds Ratio (COR) values* from the bivariate analysis and *the Adjusted Odds Ratio (AdjOR)* from the multivariate analysis. A variable is categorized as a confounder if there is a change in the OR value of ≥10%. Based on Table 4, it can be seen that the variables that are proven to be confounded by other variables are the place of delivery and the baby's weight at birth. In bivariate analysis, place of delivery did not show a significant relationship with EBI practice (p = 0.058; COR = 0.878; 95% CI: 0.770–1.002). However, after multivariate analysis, the relationship became significant (p = 0.024; AdjOR = 1.167; 95% CI: 1.021–1.335), with a change in OR of 32.91%,

Based on the analysis of the regression logistics listed in Table 3, the formulation of the equality regression logistics is as follows:

y = -1.097 + 0.111 (parity) + 0.992 (method delivery) + 0.155 (place delivery) + 0.344 (baby weight) moment born) p = 1 /(1+exp [-(y)])

In Table 5. respondent A is calculation probability EBI practices in Indonesia with characteristics parity ≥ 2, normal delivery method, giving birth in a health facility, and giving birth to a baby with normal birth weight, in equality logistics , parity ≥ 2 is coded 1 and parity 1 is coded 0, method normal delivery coded 1 and method labor with operation fault coded 0, giving birth in a facility health coded 1 and gave birth in a non- facility health coded 0, and the baby was born with normal weight is coded 1 and the baby is born with heavy born abnormal coded 0. Based on Table 5, it can be seen that probability highest EBI practices in WUS in Indonesia are in mothers who have parity ≥ 2, giving birth using normal methods, giving birth in a health facility, and giving birth to a baby with normal birth weight by 62.34%, while probability lowest is the one who has parity 1, giving birth by caesarean section, giving birth in a non-health facility, and giving birth to a baby with an abnormal birth weight by 25.03%.

In the variable of type of residential area, the PR value was 1.044; 95% CI: 1.013–1.077,

Table 5. Probability of EBI Practice

Respondent Types	Parity	Delivery Methods	Places of Delivery	Baby BB	Probability (%)
Respondent A	≥ 2	Normal	Health Facilities	Normal	62.34
Respondent B	≥ 2	C-section	Non-Health Facilities	Abnormal	27.15
Respondent C	1	Normal	Non-Health Facilities	Abnormal	47.38
Respondent D	1	C-section	Health Facilities	Abnormal	28.05
Respondent E	1	C-section	Non-Health Facilities	Normal	32.02
Respondent F	1	C-section	Non-Health Facilities	Abnormal	25.03

Primary Data (2025)

it's means that mothers who live in rural areas are approximately 1.044 times more likely to practice EBI compared to those who live in urban areas. In line with a study in Malawi which showed that mothers in rural areas have a 1.98 times greater chance of practicing EBI than mothers in urban areas (Nkoka *et al*., 2019). Another study conducted in 24 Sub-Saharan African countries also found that mothers who live in rural areas have a 1.16 times greater chance of practicing similar practices (Bolarinwa *et al*., 2022).

Referring to Table 2, the variable of maternal education level is related to the practice of EBI and has a PR value of 0.920; 95% CI: 0.892–0.948, which shows that mothers with a high level of education have a smaller tendency to practice EBI compared to those with low education. This finding is not in line with most previous studies, such as those conducted in Gambia (Darboe *et al*., 2023), Saudi Arabia (A. E. Ahmed & Salih, 2019), Ethiopia (K. Y. Ahmed *et al*., 2019; Hussen *et al*., 2024; Lakew *et al*., 2015; Liben & Yesuf, 2016), India (Meshram *et al*., 2024; Senanayake *et al*., 2019; Yadav *et al*., 2022), Namibia (Ndirangu *et al*., 2018), South Asia (Sharma & Byrne, 2016), Sub-Saharan Africa (Bolarinwa *et al*., 2022), Ghana (Apanga & Kumbeni, 2021), West Africa (Terefe *et al*., 2024), Indonesia (Nurokhmah *et al*., 2023), and Bangladesh (K. Y. Ahmed *et al*., 2019) which generally show that Mother with education tall own opportunity more large (PR > 1) for do EBI practice. This difference will be analyzed further at the stage of testing potential confounding variables.

Analysis of the economic status variable showed a PR value of 0.935; 95% CI: 0.906–0.964. This finding indicates that mothers with high economic status have a statistically lower chance of practicing EBI compared to mothers with low economic status. In line with with research in Mauritania, which reported that Mother from group economy highest own 0.61 times more chance low For doing EBI compared with the group below (Sarfo *et al*., 2024). However thus, some other studies actually show opposite results, where the mother with high economic status tall own opportunity more large (PR >1) in do EBI (Ahinkorah *et al*., 2022; A. E. Ahmed & Salih, 2019; K. Y. Ahmed *et al*., 2019; Berde & Yalcin, 2016; Birhan *et al*., 2022; Bolarinwa *et al*., 2022; Darboe *et al*., 2023; Ezeh *et al*., 2019; Finnie *et al*., 2020; Gayatri & Dasvarma, 2020; Harriott *et al*., 2022; John *et al*., 2019; Ndirangu *et al*., 2018; Nurokhmah *et al*., 2023; Sharma & Byrne, 2016; Tilahun *et al*., 2016) practice. The difference results will be analyzed further in the analysis of confounders section.

In Table 2, parity has a PR of 1.068; CI 95%= 1.024-1.114, which means mother who has parity ≥ 2 have a 1.068 times greater chance of practicing EBI compared to mothers with a parity of 1. This finding is consistent with studies conducted in six low-middle-income countries (Patel *et al*., 2015)[20]and in Ethiopia (Armdie *et al*., 2024), which found that higher parity is associated with an increased chance of mothers practicing EBI. The frequency of ANC has a PR of 0.958; 95% CI = 0.929-0.989, so that mothers who during pregnancy did ANC ≥ 6 times had a 0.959 lower chance of practicing EBI compared to mothers who during pregnancy did ANC < 6 times. A similar pattern was found in a study in Cambodia, which showed that mothers who did ANC ≥ 4 times and 1–3 times, respectively, actually had

a lower chance of doing EBI (0.84 and 0.83, respectively) compared to mothers who did not do ANC at all (Harriott *et al*., 2022). However, other studies showed a positive relationship between the frequency of ANC and the practice of EBI (K. Y. Ahmed *et al*., 2019; Ayalew *et al*., 2022; Senanayake *et al*., 2019). This difference in results will be discussed further in the confounding analysis.

In the variable of delivery method, the PR value obtained was 1.669; CI 95%: 1.597–1.745, meaning that mothers who give birth normally have a possibility of approximately 1.669 times greater to practice EBI compared to those who give birth by cesarean section, strengthening the results of previous studies which show that normal or vaginal delivery methods have a greater chance of doing EBI compared to cesarean delivery methods (Acharya *et al*., 2019; Adewuyi *et al*., 2017; A. E. Ahmed & Salih, 2019; K. Y. Ahmed *et al*., 2019; Apanga & Kumbeni, 2021; Armdie *et al*., 2024; Berde & Yalcin, 2016; Birhan *et al*., 2022; Bolarinwa *et al*., 2022; Cozma-Petruț *et al*., 2019; Ezeh *et al*., 2019; Farhana *et al*., 2019; Finnie *et al*., 2020; Gayatri & Dasvarma, 2020; Harriott *et al*., 2022; Hussen *et al*., 2024; Lakew *et al*., 2015; Liben & Yesuf, 2016; Lucha & Mengistu, 2022; Lyellu *et al*., 2020; Mekonen, 2024; Ndirangu *et al*., 2018; Nkoka *et al*., 2019; Sarfo *et al*., 2024; Seidu *et al*., 2020; Tilahun *et al*., 2016; Yadav *et al*., 2022).

In the variable of baby's birth weight, the PR value of 1.265; CI 95%: 1.188–1.348 indicates that mothers who gave birth to babies with normal birth weight have approximately 1.265 times greater chance of practicing EBI compared to those whose babies were born with abnormal weight. A similar trend is reflected in several previous studies, which showed a positive relationship between normal birth weight and EBI practices (Adewuyi *et al*., 2017; Ahinkorah *et al*., 2022; Apanga & Kumbeni, 2021; Ezeh *et al*., 2019; Gayatri & Dasvarma, 2020). However, two other studies showed contrasting results, where mothers who gave birth to babies with low birth weight had a higher chance of practicing EBI than mothers who gave birth to babies with normal or large birth weight (Acharya *et al*., 2019; Ndirangu *et al*., 2018). This difference will be further analyzed in the confounding variable test.

In Table 3, the parity variable increases the chance of practicing EBI by 1.118 times. This is because mothers who have many children have more experience and knowledge about EBI practices compared to primiparous mothers (Armdie *et al*., 2024; Patel *et al*., 2015). Method labor has an AOR of 2.696, which indicates that mother who gives birth normally have 2,696 times more chance to do EBI practices compared with mother who gives birth through operation cesarean section, operation fault known can hinder implementation of EBI because a number of factors, such as influence anesthesia that delays the initiation process lactation, potential disturbance breathing in babies, as well as focus power better health directed at stabilization condition mother and baby postpartum, so that EBI practice does not can done quick (Liben & Yesuf, 2016; Ndirangu *et al*., 2018).

Based on Table 3, the place of delivery shows an AOR of 1.167, which means that mothers who give birth in health facilities have a 1.167 times greater chance of practicing EBI compared to those who give birth in non-health facilities. This can occur because in health facilities, mothers tend to receive encouragement and direct assistance from health workers to immediately breastfeed their babies (Tilahun *et al*., 2016). In addition, the education and monitoring processes available at health facilities also help mothers feel more prepared and confident in carrying out EBI (Senanayake *et al*., 2019). This finding is reinforced by other studies, which show that giving birth in health facilities is associated with increased EBI practices (Berde & Yalcin, 2016; Harriott *et al*., 2022; Nkoka *et al*., 2019; Yadav *et al*., 2022).

The variable of baby's weight at birth also showed a significant relationship with the practice of EBI, with an AOR of 1.410. This means that mothers who give birth to babies with normal birth weight have a 1.410 times greater chance of practicing EBI compared to mothers whose babies are born with abnormal weight, Babies with normal birth weight are generally in good health, have a strong suckling reflex, and mature sucking and swallowing coordination, making it easier to start breastfeeding immediately (Ezeh *et al*.,

2019). In contrast, babies with low birth weight often experience prematurity, weak sucking reflex, and difficulty swallowing, making the EBI process difficult (Apanga & Kumbeni, 2021; Ezeh *et al*., 2019; Ndirangu *et al*., 2018). In addition, babies with low birth weight tend to require further medical intervention resulting in separation from the mother in the early period after birth, which can delay early breastfeeding initiation.

The result indicates that there is an influence of other variables that previously covered the relationship. One of the variables that is strongly suspected as a confounder is parity. Previous studies have shown a significant relationship between parity and the choice of place of delivery, where mothers with low parity are more likely to choose to give birth in health facilities, while mothers with high parity more often choose to give birth at home or outside health facilities (Dickson *et al*., 2016). Therefore, the place of delivery in this study is proven to be confounded by parity.

Similarly, the baby's birth weight also experienced a change of OR 11.48%, which indicates the role of other variables in the relationship. Previous studies have shown that parity is associated with the risk of Low Birth Weight (LBW), especially in primiparous mothers who have a higher risk of giving birth to LBW than multiparous mothers (Lin *et al*., 2021). Therefore, the baby's birth weight has been shown to be confounded by parity. The use of 2023 SKI data covering all regions of Indonesia makes the results of this study relevant to describe the condition of the population of women of childbearing age nationally. Weakness in study This is No can know exposure or EBI practices that occur more before, so that No can ensure connection because consequence (Bangdiwala, 2019). Besides that, research This using secondary data, so variables studied limited to the variables available in the SKI 2023 dataset.

Conclusion

Parity, mode of delivery, place of delivery, and infant birth weight were significant determinants of early initiation of breastfeeding (EIBF) in Indonesia, with mode of delivery emerging as the strongest predictor. Higher parity, vaginal delivery, facility-based childbirth, and normal birth weight were associated with a greater likelihood of EIBF. The use of secondary cross-sectional data and the lack of information on prior EIBF exposure limit causal inference. Future national surveys should include maternal age at delivery, and strengthening facility-based childbirth may enhance EIBF practices among women of reproductive age.

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