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Exclusive breastfeeding and it's determinants in Indonesia, 2022

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ABSTRACT

Background: Exclusive breastfeeding (EBF) for the first six months of life is crucial for infant health as it is associated with positive health outcome. However, it's coverage remains low in Indonesia therefore, closing this gap involves identifying characteristics associated to exclusive breastfeeding.

Objectives: This study aimed to identify the EBF practices and its associated factors in Indonesia.

Methods: This analytical cross-sectional study analysed secondary data from the 2022 Indonesia National Nutrition Survey. An analysis was conducted on 3,989 6-month-old infants from 33 provinces who were breastfed. Multiple logistic regression analysis was performed to identify the factors associated with EBF, presenting Adjusted Odds Ratio (AOR) and 95% Confidence Intervals (CI).

Results: The study results revealed that 44.95% (95% CI: 43.40-46.49) of infants received EBF. History of early initiation breastfeed (AOR=1.64, 95% CI: 1.45–1.87, P-value: <0.001), received nutritional counseling (AOR=1.16, 95% CI: 1.01-1.32, P-value: 0.026), those who participated in health promotion programs (AOR=1.47, 95% CI: 1.04–2.08, P-value: 0.026) and mother occupations recognized as employed (AOR=1.12, 95% CI: 1.03–1.34, P-value: 0.012) were more likely to practice EBF.

Conclusion: Less than a half of infants in Indonesia received EBF. Infants who had early initiation breastfeeding and mother who participated in health promotion programs were significant factors associated with EBF. Moreover, receiving nutritional counselling and mother occupation were also important factor associated with EBF although the magnitude of effect was small to make decisive conclusion. Therefore, appropriate policies and strategies should be employed to encourage early initiation of breastfeeding, to empower women in participating health programs including nutritional counselling to enhance EBF. Likewise, it is also fundamental to create workplace that allows women to be employed while continuing EBF.

Keywords: Exclusive breastfeeding, Early initiation breastfeeding, Indonesia

1. Introduction

Breastfeeding is a vital public health intervention that significantly reduces infant mortalities and improves health outcome [1-4]. The WHO and UNICEF recommend exclusive breastfeeding (EBF) as essential nutrition for infants during the first six months of life [5-7]. However, despite global targets of achieving 70% EBF rates, less than 40% of mothers adhere to this practice [8-10].

In Indonesia, EBF prevalence among infants aged 0-6 months declined dramatically from 37.3% in 2018 to 16.7% in 2022, largely due to shifts toward formula-feeding driven by industrialization and socioeconomic changes [11-15]. This trend undermines efforts to achieve the 2030 Sustainable Development Goals, which aim to reduce neonatal mortality to minimum 12 per 1,000 live births [16].

Multiple barriers hinder EBF practices, including individual factors (maternal age, education, occupation, parity), cultural influences (societal norms, family attitudes), health facility factors (healthcare worker support, early breastfeeding initiation), and socioeconomic determinants (residence, health insurance status [2, 5, 11, 17-23]. Practical challenges such as returning to work, lack of privacy, and delivery circumstances further complicate EBF adherence mother [5, 11, 22].

Identifying these barriers is crucial for developing evidence-based strategies to achieve SDGs related to poverty, hunger, and health. However, Indonesia lacks comprehensive national-level research examining factors specifically affecting EBF practices among infants at precisely six months of age.

Therefore, this study aims to determine EBF prevalence and identify associated factors among 6-month-old infants in Indonesia. This research is essential for health service providers, policymakers, and program administrators to formulate targeted interventions that enhance exclusive breastfeeding behaviors and improve infant health outcomes nationwide.

2. Methods

2.1 Study Area

This study included representative national population data across 33 province and 479 district in Indonesia, exclude one province it was Nusa Tenggara Timur due to security concern [24, 25].

2.2 Study Design

A cross-sectional study utilized secondary data of 2022 Indonesia national Nutritional Status Survey as known as 2022 Survey Status Gizi Indonesia (SSGI).

2.3 Sample Size and Sampling

The 2022 Indonesian National Nutritional Status Survey methodology used a stratified two-stage sampling technique from March-December 2022 and 345,000 households were surveyed during this period. Therefore, this present study included the criteria of infants aged 6 months and exclude who were ineligible for exclusive breastfeeding, also exclude who had missing and known data of independent variable. This study used secondary data with the sample size (n=3,989) based on logistics regression formula by *Hseih, Bloch and Larsen* [26] and estimated power for a one-sample proportion test [27]. Sample size determination was following a prior study on EBF in Indonesia [2], where the exposure (P0= 0.46) and non-exposure (P1=0.58) groups showed a power value of 1.00, ensuring representative sampling.

2.4 Data Collection

Data collected from the questionnaires converted into an Excel format. This study extracted variable data from SSGI questionnaire that combines two questionnaire instruments developed by the Ministry of Health of the Republic of Indonesia, namely the Household Survey (SSGI-2022-RT) and Individual Survey (SSGI-2022-IND_BLT) [28].

Exclusive breastfeeding prevalence estimated from children aged 6 months who did not consume anything other than breast milk for their first 6 months of life [29]. Data collected from mother's recall of food given to her baby since birth as exclusive breastfeeding for 6 months, based on the age of introduction of solid food and drink. Dependent variables were defined in binary categories, exclusive breastfeeding "yes: introduce age at six months" and unexclusive breastfeeding "no: introduce in early age of recommendation"

The study identified thirteen independent variables: educational level of mother and father, mother occupation, family socioeconomic, birthplace, early initiation breastfeeding, nutrition counseling, health promotion programs participation, infants' upper respiratory infection history, infant immunization history, infants' nutritional status and mother ANC history. Birthplace as infant's standard birthplace and birth

attendance. Early initiation breastfeeding refers to Record of infants who were put the breast which did an early breastfed within one hour of birth. Nutrition counseling evaluated from to mother received nutrition or health topic counseling and Infant measles and upper respiratory infection history assessed during the past 6 months. Health promotion programs involve infants participating in preventive measures like weight monitoring, immunizations, counselling, Vitamin A supplementation, and deworming medication for the past six months. Family status of household assessed by Ownership of assets and provision of social welfare [28].

2.5 Data Analysis

Data were evaluated for completeness and converted into an Excel format, then exported to STATA (Version 18, Stata Corporation, College Station TX). Descriptive statistics were used to analyse baseline characteristics, reported as number and percentage for categorical data, mean, standard deviation, median and range (minimum-maximum) described for the continuous data. Bivariate analysis using simple logistic regression and multivariable analysis using multiple logistic regression were conducted. The backward elimination procedure identified associations between independent and dependent variables. Variables with a 95% Confidence Interval (CI) and P-value < 0.25 in the bivariate analysis were included in the initial multivariable model to control for confounder. Those variables with P-values less than or equal to 0.05 in multivariable analysis were considered significant. Multicollinearity between the independent checked. The results presented as AORs and their 95% CI.

3. Results

Among 3,989 infants aged six months, slightly more than half (51.54%) were male. A significant proportion (56.76%) received early initiation of breastfeeding within the first hour of birth, and nearly two-thirds (62.97%) were born to employed mothers. Most of these infants (96.14%) belonged to families that actively participated in health promotion programs, while approximately one-third (36.53%) received nutritional counselling.

Table 1: Baseline characteristics of the study population (n=3,989)

Characteristics	Number (n)	Percentage (%)
Gender of Children		
Male	2,056	51.54
Female	1,933	48.46

Characteristics	Number (n)	Percentage (%)
Educational Level of Mother		
No formal education	154	3.86
Primary education	579	14.51
Lower secondary education	819	20.53
Upper secondary education	1,635	40.99
Tertiary Education	802	20.11
Educational Level of Father		
No formal education	154	3.86
Primary education	607	15.22
Lower secondary education	731	18.33
Upper secondary education	1,822	45.68
Tertiary Education	675	16.91
Mother Occupation		
Unemployed	1,477	37.03
Employed	2,512	62.97
Family Socio-Economic Status		
In secured with public welfare=Rich	723	18.12
Secured with public welfare=Poor	3,266	81.88
Residence		
Rural	1,770	44.37
Urban	2,219	55.63
Birthplace		
Non-health facilities and/or without SBA	1,314	32.94
Heath Facilities or with SBA	2,675	67.06
Health Promotion Programs Participation		
No	154	3.86
Yes	3,835	96.14
History of Upper Respiratory Tract Infected Children		
Yes	242	6.07
No	3,747	93.93
Immunizations History in past 6 months		
No	448	11.23
Yes	3,541	88.77
Early Initiation Breastfeeding History of Children		
No	1,725	43.24
Yes	2,264	56.76
Mother ANC History		
No	143	3.58
Yes	3,846	96.42
Nutrition Counselling History		
No	2,532	63.47
Yes	1,457	36.53
Z-Score Weight for Age of Infants		
Underweight (< -2.0 SD)	273	6.84
Normal (≥ -2.0 to ≤ 2 SD)	3,660	91.76
Overweight (>2 SD)	56	1.40
Mean (±SD)	-0.46 (±1.08)	
Median (min: max)	-0.52 (-5.60: 3.86)	
Z-Score Height for Age of Infants		
Stunted (< -2.0 SD)	323	8.10
Normal (≥ -2.0 to ≤ 2 SD)	3,570	89.50
High (> 2.0 SD)	96	2.40
Mean (±SD)	-0.41 (±1.21)	
Median (min: max)	-0.42(-5.45: 7.78)	

Prevalence of exclusive breastfeeding practice among infants aged 6 months in Indonesia was 44.95% (95% CI: 43.40-46.49) (Table 2).

Table 2: Prevalence of Exclusive Breastfeeding among infants aged 6 months in Indonesia, 2022 (n=3,989)

EBF Status	Number (n)	Percentage (%)	95% CI
Not EBF	2,196	55.05	53.50-56.59
EBF	1,793	44.95	43.40-46.49

Bivariate analysis using simple logistic regression found that factors such as early initiation breastfeeding (COR=1.66, 95% CI: 1.46-1.89), nutrition counselling (COR=1.20, 95% CI: 1.06-1.37), health promotion programs participation (COR=1.53, 95% CI: 1.06-1.61) and ANC history of mother (COR=1.59, 95% CI: 1.12-2.26) were associated with increase odd on EBF. Nevertheless, employed mother (COR=1.17, 95% CI: 1.03-1.34) also more likely to practice breastfed exclusively (Table 3).

Table 3: Association of Exclusive Breastfeeding with each factor: Bivariate Analysis (n=3,989)

Factors	Total sample (n)	% of EBF	Crude OR	95% CI	P-value
Educational Level of Mother					0.175
Uneducated	154	39.61	1		
Educated	3,835	45.16	1.25	0.90 – 1.74	
Educational Level of Father					0.231
Uneducated	154	40.26	1		
Educated	3,835	45.14	1.22	0.87 – 1.69	
Mother Occupation					0.013
Unemployed	1,477	42.38	1		
Employed	2,512	46.46	1.17	1.03 – 1.34	
Family Social Economic Status					0.137
Insecure with public welfare=Rich	3,266	44.40	1		
Secured with public welfare=Poor	723	47.44	1.13	0.96 – 1.32	
Health Promotion Program Participation					0.013
No	154	35.06	1		
Yes	3,835	45.35	1.53	1.06 – 1.61	
Birthplace					0.239
Health facilities or with SBA	2,675	44.29	1		
Non-health facilities or without SBA	1,314	46.27	1.08	0.94 – 1.23	
Upper Respiratory Tract Infection History of Children					0.242
Yes	242	41.32	1		
No	3,747	45.18	1.17	0.89 – 1.52	
Immunizations History in past 6 months					0.122
No	448	41.52	1		
Yes	3,541	45.38	1.17	0.95 – 1.42	
Early Initiation Breastfeeding History of Children					<0.001
No	1,725	37.86	1		
Yes	2,264	50.35	1.66	1.46 – 1.89	
Mother ANC History					0.008

Factors	Total sample (n)	% of EBF	Crude OR	95% CI	P-value
No	143	34.27	1		
Yes	3,846	45.35	1.59	1.12 – 2.26	
Nutrition Counselling History					0.004
No	2,532	43.25	1		
Yes	1,457	47.91	1.20	1.06 – 1.37	
Z-Score Weight for Age of Infants					0.177
Underweight (< -2.0 SD)	273	41.03	1		
Normal to Overweight (≥ -2.0 to >2 SD)	3,716	45.24	1.18	0.92 – 1.52	
Z-Score Height for Age of Infants					0.098
Stunted (< -2.0 SD)	323	40.56	1		
Normal to tall (≥ -2.0 to > 2 SD)	3,666	45.34	1.21	0.96 – 1.53	

Results from multivariable analysis revealed only early initiation of breastfeeding, nutrition counselling, health promotion programs participation and mother occupation significantly associated with exclusive breastfeeding. Infants who had early initiation breastfeeding were 1.64 times (AOR=1.64, 95% CI: 1.45-1.87) more likely to undertake EBF than infants who had not. Moreover, mother who were received nutrition counselling were 1.16 (AOR=1.16, 95% CI: 1.01-1.32) more likely to practice EBF that mother who did not, though magnitude of effect too small to establish a conclusive association. Additionally, infants from families who participated in health promotion programs were 1.47 times (AOR=1.47, 95% CI: 1.04-2.08) times more likely to practice EBF that infants from families who not participated. Interestingly, employed mother (AOR=1.12, 95% CI: 1.03-1.34) have higher chance to practice EBF than unemployed mother (Table 4).

Table 4: Factors associated with Exclusive Breastfeeding among infants aged 6 months in Indonesia, 2022: Multivariable Analysis (n=3,989)

Factors	Total sample (n)	% of EBF	Crude OR	Adj. OR	95% CI	P-value
Mother Occupation						0.012
Unemployed	1,477	42.38	1	1		
Employed	2,512	46.46	1.17	1.12	1.03– 1.34	
Health Promotion Program Participation						0.026
No	154	35.06	1	1		
Yes	3,835	45.35	1.53	1.47	1.04 – 2.08	
Early Initiation Breastfeeding History of Children						<0.001
No	1,725	37.86	1	1		
Yes	2,264	50.35	1.66	1.64	1.45 – 1.87	
Nutrition Counselling History						0.026

Factors	Total sample (n)	% of EBF	Crude OR	Adj. OR	95% CI	P-value
No	2,532	43.25	1	1		
Yes	1,457	47.91	1.20	1.16	1.01 – 1.32	

4. Discussion

This present study covers almost all infants at 6 months in each 33 provinces of Indonesia. Our study revealed that nearly half of the Indonesian infants had EBF at 6 months (44.95%). This result was contradicted with several previous national studies from Nepal [30], Ethiopia [31] and Indonesia as well [2, 32, 33], which reveled more than half (51.6 – 52.3%) of infants had exclusive breastfeeding. The variations between these findings could be due to differences in survey methodologies, sample sizes, demographic characteristics, and the temporal aspects of data collection.

Our study identified early initiation of breastfeeding in first hour of birth as key determinant for EBF. Infants who had history of early initiation of breastfeeding were more likely to practice EBF than infants who were not had early initiation of breastfeeding. Current finding was consistent with previous from Arab Saudi [34], Japan [35], China [36] and Ethiopia [37] studies informed that infants who received early initiation breastfeeding within one hour of birth were more likely to complete EBF. This could be justified because early initiation of breastfeeding helps develop a proper latch, rhythm, and confidence while early suckling triggers prolactin and oxytocin release, facilitating milk production and ejection [32, 33] which encourage the mother to continue practicing EBF.

Furthermore, it showed that mothers who received nutritional counselling were more likely to practice EBF than those who did not receive counselling. This is in line with studies performed in Africa [38], Ethiopia [31], meta-analysis from Ghana [39] and Pakistan [40]. Nutrition counselling is crucial for promoting exclusive breastfeeding (EBF) by providing mothers with knowledge, skills, and support which enhances maternal self-efficacy and contributes to EBF success [38, 40, 41]. Studies showed that counselling improves self-efficacy and confidence in breastfeeding as health professionals provide tailored advice, helping mothers make informed decisions. Moreover, infants from families who participated in health promotion programs were 1.47 times had higher chance

to be exclusively breastfed compared to those from families who not participated. These programs likely provide education and resources that empower families to support breastfeeding mothers [42]. Health promotion programs, such as the Baby-Friendly Community Initiative, integrate support into clinical and community settings, improving breastfeeding outcomes and enhancing family support, leading to higher EBF rates [43-45]. The study also found that employed mothers are more likely to practice exclusive breastfeeding. This is supported by similar studies performed in Kenya [46], Tanzania [47] and Taiwan [48]. This might be due to workplace support and policies [49]. In Indonesia, granting six months of maternity leave may encourage more intensive care for newborns. Urban areas have a higher proportion of mothers, possibly due to differences in access to accommodations and breastfeeding-friendly policies. Supportive workplace environments, part-time employment, and extended maternity leave are critical factors in promoting exclusive breastfeeding [50, 51].

This study offers valuable insights into the prevalence of exclusive breastfeeding (EBF) and its associated factors among infants aged six months in Indonesia, providing critical implications for improving breastfeeding practices through evidence-based policymaking. By leveraging secondary data and employing a multivariable logistic regression model, the study identifies key maternal and sociodemographic factors influencing EBF, such as early breastfeeding initiation, maternal employment, participation in health promotion programs, and nutritional counselling.

Despite its strengths, including a comprehensive analytical approach, the study is limited by its reliance on secondary data and a cross-sectional design, which restricts causal inferences and may omit relevant variables. Recall bias and context-specific findings further limit the generalizability of results beyond Indonesia. Future longitudinal studies incorporating diverse factors, such as healthcare access and cultural influences, are recommended to provide a more nuanced understanding of EBF practices across different populations.

5. Conclusion

This study revealed a suboptimal prevalence of exclusive breastfeeding practice, remain public health concern in Indonesia. It found that early initiation breastfeeding and health

promotion programs participation were significantly associated with exclusive breastfeeding. Moreover, nutrition counselling, and maternal occupation were important factors, though their effect sizes were small for drawing desive conclusions. Therefore further effort are requaried to increase the practice of EBF, by promoting early initiation breatsfeeding, expand nutrition counsleing program and health promotion programs. Enhancing workplace support policies for breastfeeding mothers, such as providing lactation rooms and flexible working hours. Further studies are still needed for longitudinal research to identify effect causality. Additionally, it is essential to examine gold standard for measuring of EBF prevalence to align established criteria recommendation.

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Author contributions

FRA: Conceptualization, data curation, formal analysis, methodology, writing original draft, writing review and editing. WL: Conceptualization, supervision, writing original draft, writing review and editing. RKM: Conceptualization, supervision, writing original draft, writing review and editing.

Declaration

Ethics approval and consent to participate

This study was approved by the Centre for Ethics in Human Research, Khon Kaen University Khon Kaen University (Research Code HE672261) and Permission letter to access data for conducting research from Indonesia Ministry of Health No 2404D72AF8FE4814.

Competing interests

The authors declared that they have no competing interests.

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References

[1] Nigatu D, Azage M, Motbainor A. Effect of exclusive breastfeeding cessation time on childhood morbidity and adverse nutritional outcomes in Ethiopia: Analysis of the demographic and health surveys. PLoS One. 2019;14(10):e0223379.

[2] Gayatri M. Exclusive Breastfeeding Practice in Indonesia: A Population-Based Study. Korean J Fam Med. 2021;42(5):395-402.
[3] UNICEF W. Indicator for Assessing Infant and Young Child Feeding Practices. Geneva2021.
[4] Masi AC, Stewart CJ. Role of breastfeeding in disease prevention. 2024;17(7):e14520.
[5] Patil DS, Pundir P, Dhyani VS, Krishnan JB, Parsekar SS, D'Souza SM, et al. A mixed-methods systematic review on barriers to exclusive breastfeeding. 2020;26(4):323-46.
[6] Young MF, Faerber EC, Mehta RV, Ranjan S, Shetty SA, Ramakrishnan U, et al. Maternal nutritional status and milk volume and composition in India: an observational study. The American Journal of Clinical Nutrition. 2023;117(4):830-7.
[7] Meng F, Uniacke-Lowe T, Lanfranchi E, Meehan G, O'Shea C-A, Dennehy T, et al. A longitudinal study of fatty acid profiles, macronutrient levels, and plasmin activity in human milk. Front Nutr. 2023;10.
[8] Brown LJ, Sear R. Are mothers less likely to breastfeed in harsh environments? Physical environmental quality and breastfeeding in the Born in Bradford study. 2019;15(4):e12851.
[9] Burger B, Schindler K, Tripolt T, Griesbacher A, Stuger HP, Wagner KH, et al. Factors Associated with (Exclusive) Breastfeeding Duration-Results of the SUKIE-Study. Nutrients. 2022;14(9).
[10] UNICEF W. Global Breastfeeding Scorecard 2021; Protecting Breastfeeding through Bold National Actions during the COVID-19 Pandemic and Beyond. Geneva, Switzerland: World Health Organization; 2021.
[11] Hegazi MA, Allebdi M, Almohammadi M, Alnafie A, Al-Hazmi L, Alyoubi S. Factors associated with exclusive breastfeeding in relation to knowledge, attitude and practice of breastfeeding mothers in Rabigh community, Western Saudi Arabia. World Journal of Pediatrics. 2019;15(6):601-9.
[12] Terefe B, Habtie A, Chekole B. Multilevel modeling analysis of bottle feeding and its determinants among children 0–23 months in East Africa: evidence from recent DHS data (2015–2022). International Breastfeeding Journal. 2024;19(1):24.
[13] Pérez-Escamilla R, Tomori C, Hernández-Cordero S, Baker P, Barros AJD, Bégin F, et al. Breastfeeding: crucially important, but increasingly challenged in a market-driven world. The Lancet. 2023;401(10375):472-85.
[14] Baker P, Zambrano P, Mathisen R, Singh-Vergeire MR, Escober AE, Mialon M, et al. Breastfeeding, first-food systems and corporate power: a case study on the market and political practices of the transnational baby food industry and public health resistance in the Philippines. Globalization and Health. 2021;17(1):125.
[15] Magalhães M, Ojeda A, Mechlowitz K, Brittain K, Daniel J, Roba KT, et al. Socioecological predictors of breastfeeding practices in rural eastern Ethiopia. International Breastfeeding Journal. 2022;17(1):93.
[16] Yunus Y, Ratrikaningtyas PD, Ernawati D. DETERMINANTS OF UNSUCCESFUL EXCLUSIVE BREASTFEEDING - A SCOPING REVIEW. European Journal of Public Health Studies; Vol 4, No 2 (2021)DO - 1046827/ejphsv4i297. 2021.
[17] Li J, Zhao C, Wang Y, Wang YP, Chen CY, Huang Y, et al. Factors associated with exclusive breastfeeding practice among mothers in nine community health centres in Nanning city, China: a cross-sectional study. International Breastfeeding Journal. 2021;16(1):71.
[18] Li J, Nguyen TT, Wang X, Mathisen R, Fang J. Breastfeeding practices and associated factors at the individual, family, health facility and environmental levels in China. Maternal & child nutrition. 2020;16 Suppl 2(Suppl 2):e13002.
[19] Chertok IA, Artzi-Medvedik R, Arendt M, Sacks E, Otelea MR, Rodrigues C, et al. Factors associated with exclusive breastfeeding at discharge during the COVID-19 pandemic in 17 WHO European Region countries. Int Breastfeed J. 2022;17(1):83.
[20] Decelles S, Nardocci M, Mildon A, Salameh B, Batal M. Determinants of exclusive breastfeeding among Haitian children under 6 months of age. Revista panamericana de salud publica = Pan American journal of public health. 2022;46:e84.
[21] Hashim S, Ishak A, Muhammad J. Unsuccessful Exclusive Breastfeeding and Associated Factors among the Healthcare Providers in East Coast, Malaysia. Korean J Fam Med. 2020;41(6):416-21.
[22] Bürger B, Schindler K, Tripolt T, Griesbacher A, Stüger HP, Wagner KH, et al. Factors Associated with (Exclusive) Breastfeeding Duration-Results of the SUKIE-Study. Nutrients. 2022;14(9).

[23] Jama A, Gebreyesus H, Wubayehu T, Gebregyorgis T, Teweldemedhin M, Berhe T, Berhe N. Exclusive breastfeeding for the first six months of life and its associated factors among children age 6-24 months in Burao district, Somaliland. International Breastfeeding Journal. 2020;15(1):5.
[24] Indonesia Ministry of Health. The Indonesian Nutrition Status Survey 2022. Jakarta: Indonesia Ministry of Health; 2022.
[25] Indonesia Ministry of Health. Indonesia Nutritional Status Survey ; Report 2022. Jakarta: Indonesia Ministry of Health; 2023.
[26] Hsieh FY, Bloch DA, Larsen MD. A simple method of sample size calculation for linear and logistic regression. J Statistics in medicine. 1998;17(14):1623-34.
[27] StataCorp L. Stata power, precision, and sample-size reference manual. 2021.
[28] Health Development Policy Agency. Indonesian Nutiriton Status Survey 2022 ; Report. Jakarta: Indonesia Ministry of Health; 2023.
[29] UNICEF W. Indicators for Assessing Infant and Young Child Feeding Practices. Geneva: World Health Organization; 2021.
[30] Singh BK, Khatri RB, Sahani SK, Khanal V. Determinants of exclusive breastfeeding among infants under six months in Nepal: multilevel analysis of nationally representative household survey data. BMC Public Health. 2024;24(1):2456.
[31] Shitie A, Tilahun A, Olijira L. Exclusive breastfeeding practice and associated factors among mothers of infants age 6 to 12 months in Somali region of Ethiopia. Scientific Reports. 2022;12(1):19102.
[32] Idris H, Astari DW. The practice of exclusive breastfeeding by region in Indonesia. Public Health. 2023;217:181-9.
[33] Syahri IM, Laksono AD, Fitria M, Rohmah N, Masruroh M, Ipa M. Exclusive breastfeeding among Indonesian working mothers: does early initiation of breastfeeding matter? BMC Public Health. 2024;24(1):1225.
[34] Alshammari MB, Haridi HK. Prevalence and Determinants of Exclusive Breastfeeding Practice among Mothers of Children Aged 6–24 Months in Hail, Saudi Arabia. Scientifica. 2021;2021:2761213.
[35] Inano H, Kameya M, Sasano K, Matsumura K, Tsuchida A, Hamazaki K, et al. Factors influencing exclusive breastfeeding rates until 6 months postpartum: the Japan Environment and Children's Study. Scientific Reports. 2021;11(1):6841.
[36] Shi H, Yang Y, Yin X, Li J, Fang J, Wang X. Determinants of exclusive breastfeeding for the first six months in China: a cross-sectional study. International Breastfeeding Journal. 2021;16(1):40.
[37] Jebena DD, Tenagashaw MW. Breastfeeding practice and factors associated with exclusive breastfeeding among mothers in Horro District, Ethiopia: A community-based cross-sectional study. PLOS ONE. 2022;17(4):e0267269.
[38] Duarte Lopes E, Monteiro AMRL, Varela DOBFC, Trigueiros DELR, Monteiro Spencer Maia I, de Jesus Xavier Soares J, da Luz Pires Vieira NM. The prevalence of exclusive breastfeeding and its associated factors in Cape Verde. BMC Nutrition. 2022;8(1):74.
[39] Mohammed S, Yakubu I, Fuseini AG, Abdulai AM, Yakubu YH. Systematic review and meta-analysis of the prevalence and determinants of exclusive breastfeeding in the first six months of life in Ghana. BMC Public Health. 2023;23(1):920.
[40] Chaudry ZA, Naz T, Arshad I, Zahoor A, Javaid M, Sikander S. Innovative continuum of care to promote exclusive breast feeding in Pakistan: protocol of a pilot randomised controlled trial. BMJ paediatrics open. 2024;8(1).
[41] Puspitasari ID, Saadah N, Sumaningsih R. The Effect of Providing Exclusive Breastfeeding Counseling on the Self-Efficacy of Breastfeeding Mothers. International Journal of Advanced Health Science and Technology. 2024;4(3):172-8.
[42] Telova Y, Damayanti, Simarmata PC. Factors Associated With Exclusive Breastfeeding On The Worker Mother. JURNAL KEBIDANAN KESTRA (JKK). 2023;5(2):192-6.
[43] Julesa Angreni M, Rizki RA, Zuitasari A, Arif A. Relationship between Knowledge, Attitude and Family Support with Exclusive Breastfeeding. Jurnal MID-Z (Midwivery Zigot) Jurnal Ilmiah Kebidanan. 2022;5(2):153-64.
[44] Zhu DT, Gupta T, Pérez-Escamilla R. Empowering Global Health Systems to Protect, Promote and Support Optimal Breastfeeding. Maternal & child nutrition. 2024;21(1):e13753.

[45] Zaman F, Nicholas A, Francis J. Effect of a Novel Breastfeeding Education Program on Exclusive Breastfeeding. Current Developments in Nutrition. 2022;6:729.
[46] Ickes SB, Adams JN, Sanders H, Kinyua J, Lemein H, Denno DM, et al. Access to Workplace Supports is Positively Associated with Exclusive Breastfeeding among Formally Employed Mothers in Kenya. Journal of Nutrition. 2022;152(12):2888-97.
[47] Mkono N, Chirande L, Moshiro R, Noorani M. Factors associated with exclusive breast feeding among mothers in formal employment in Dar es Salaam, Tanzania: a cross-sectional study. BMJ open. 2024;14(11):e091993.
[48] Yu P-J, Wu W-R, Liu C-Y. Public policy on breastfeeding among working mothers in Taiwan: comparison between two national surveys. BMC Pregnancy and Childbirth. 2023;23(1):768.
[49] Government of Indonesia. Law No. 4 of 2024 on Maternal and Child Welfare During the First Thousand Days of Life. Indonesia: Official Gazette of the Republic of Indonesia; 2024.
[50] Ray R. Individual and Organizational Factors Associated With Breastfeeding Practices in Employed Mothers. Workplace Health & Safety. 2023;71(8):375-83.
[51] Wake GE, Mittiku YM. Prevalence of exclusive breastfeeding practice and its association with maternal employment in Ethiopia: a systematic review and meta-analysis. Int Breastfeed J. 2021;16(1):86.

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