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Original Article

Continued Breastfeeding as Perceived by Ownership Index Quintile: Secondary Data from the 2023 Indonesian Health Survey

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ABSTRACT

Background: The WHO recommends breastfeeding until two years of age to support health and prevent stunting, but breastfeeding sustainability in Indonesia remains low. This study aims to analyze factors associated with breastfeeding sustainability in children aged 12 and 23 months in Indonesia using secondary data from the 2023 Indonesian Health Survey (SKI).
Methods: This *cross-sectional* quantitative study involved 10.769 children aged 12-23 months from 345.000 toddler households, selected through purposive sampling with inclusion criteria (mothers without twins, last child, no specific disease, child without congenital abnormalities) and exclusion (incomplete data), using a two-stage sampling technique (census block PPS and systematic household sampling). Data were analyzed using bivariate (*chi-square*) and multivariate analysis.
Result: The result showed a significant relationship between ownership index quintile, exclusive breastfeeding, , maternal education, place of birth, ANC staff, and ANC location, with p-values of <0.001 (<0.005) respectively, and the continuation of breastfeeding, but the ANC variable was not related, with a p-value of 0.062. The location or place of ANC at the maternity hospital/clinic was the main predictor with a value (AOR 1.5; 95% CI: 1.2 - 1.9), indicating that mothers who underwent ANC examinations at maternity home/clinics were 1.5 times more likely to continue breastfeeding after controlling for other variables
Conclusion: Socioeconomic disparities influence access to maternal health services. Breastfeeding sustainability is influenced by socioeconomic factors, facilities, and health services

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INTRODUCTION

Breastfeeding is one of the most effective interventions for ensuring child health and survival globally (World Health Organization, 2023b). The World Health Organization (WHO) and UNICEF recommend exclusive breastfeeding for the first six months of life, followed by continued breastfeeding with appropriate complementary foods up to two years of age or beyond (World Health

Organization, 2023a). This recommendation is based on substantial evidence showing that optimal breastfeeding practices can save the lives of more than 820,000 children under five years of age each year (World Health Organization, 2023b). Research shows that breastfeeding is comprehensive and multifaceted. Breastfeeding provides critical protection against gastrointestinal infections and reduces neonatal mortality when initiated within the first hour after birth (World Health Organization, 2023b). Beyond the immediate health benefits, breastfed children demonstrate superior performance on intelligence tests, are less likely to be overweight or obese, and have a lower risk of diabetes later in life (World Health Organization, 2023b). For mothers, breastfeeding reduces the risk of breast and ovarian cancer while naturally spacing births through lactational amenorrhea (United Nations Children's Fund, 2025; World Health Organization, 2023a). WHO target of achieving 50% exclusive breastfeeding rates by 2025, with the target extended to 70% by 2030 to align with the Sustainable Development Goals timeline. The Global *Breastfeeding Scorecard* 2023 shows significant progress, with global exclusive breastfeeding rates increasing by 10 percentage points over the past decade, reaching 48% (UNICEF, 2025; World Health Organization, 2023a). However, substantial disparities persist across regions and socioeconomic groups, underscoring the need for targeted interventions. Mapping inequalities in exclusive breastfeeding in low- and middle-income countries reveals persistent disparities by wealth quintile and urban-rural status (Neves et al., 2020); . These disparities have significant implications for achieving global targets, as existing inequalities can hinder overall progress in breastfeeding coverage. Research in Uganda shows that lower socioeconomic status is associated with higher rates of exclusive breastfeeding, reflecting a pattern observed in many developing countries where access to breast milk substitutes is limited among poorer populations (Mawa, 2023).

Socioeconomic status has emerged as a fundamental determinant of breastfeeding practices worldwide, with complex patterns varying by geographic context and level of development. Research shows that socioeconomic factors significantly influence breastfeeding initiation, duration, and exclusivity (Magare, Adchitre, Jadhav, & Mahajan, 2020). In Bangladesh, early initiation of breastfeeding was higher among lower household wealth quintiles and lower educational attainment groups (Ekholuenetale, Mistry, & Chimoriya, 2021). Similarly, in Peru, exclusive breastfeeding was concentrated among the poorest mothers, with residence in highland and forest areas and belonging to the middle and wealth quintiles being the main contributors (Andriani, Kuo, & Pongou, 2022; Hernández-Vásquez, Chacón-Torrico, Vargas-Fernández, & Bendezu-Quispe, 2020) . The relationship between socioeconomic status and breastfeeding operates through multiple pathways. Higher socioeconomic status is often correlated with increased maternal education, which may increase knowledge about the benefits of breastfeeding but may also facilitate access to breast milk substitutes (Magare et al., 2020).

Socioeconomic disparities in maternal health facility utilization reflect and reinforce inequalities in breastfeeding practices. Evidence from the 2018 Indonesian Basic Health Research (RISK Kesehatan Dasar Indonesia) indicates that significant socioeconomic disparities exist in maternal health facility utilization in hospitals (Adnan & Ekasari, 2025). Mothers from higher wealth quintiles are more likely to access care at private health facilities, which may provide different breastfeeding support compared to public facilities (Hodgkin, Joshy, & Lokuge, 2025). The wealth index has become a standard measure of socioeconomic status in health surveys, particularly in low- and middle-income countries where income data may be unreliable or unavailable. The wealth index is constructed using principal components analysis of household assets, housing characteristics, and utilities, providing a proxy for long-term living standards (Poirier, Grépin, & Grignon, 2020). Despite their widespread use, wealth indices have limitations that should be considered when interpreting research results. Systematic comparisons of household income, consumption, and assets to measure health inequalities suggest that wealth indices may not always capture the aspects of socioeconomic status that are most relevant for specific health outcomes (Poirier, 2024). However, in the context of large-scale health surveys, wealth indices remain valuable tools for identifying and measuring

socioeconomic inequalities (Xie, Marathe, & Deng, 2023). The use of wealth index quintiles in maternal and child health analyses allows for the identification of systematic patterns of inequality and facilitates comparisons across populations and time. This approach has proven effective in uncovering disparities in a range of health outcomes, including breastfeeding practices, maternal health service utilization, and child nutritional status (Abdel-Razzaq & Choudhury, 2021).

Indonesia has made progress in improving breastfeeding practices, but still faces significant challenges in achieving global targets. Recent data shows that exclusive breastfeeding rates in Indonesia remain below WHO/UNICEF targets, with substantial variation across regions and socioeconomic groups (Ariani et al., 2025). Analysis of Indonesian health survey data reveals complex patterns in breastfeeding practices across wealth quintiles. Research shows that factors such as place of delivery, length of care, quality of antenatal care, and early initiation of breastfeeding vary significantly by socioeconomic status (Ariani et al., 2025). Mothers from higher wealth quintiles are more likely to give birth in private health facilities and receive longer care, but their breastfeeding patterns may be influenced by different factors than those of mothers from lower wealth quintiles. Several factors have been identified as influencing breastfeeding practices in Indonesia, including maternal age , education level, place of birth, quality of antenatal care, and social support. Research (Ariani et al., 2025) suggests that structured postpartum visits can improve breastfeeding practices, particularly among traditional market traders in North Sumatra. This highlights the importance of ongoing support and interventions tailored to the work and socioeconomic context.

Research on breastfeeding practices and their socioeconomic determinants, significant gaps remain in our understanding of sustainable breastfeeding patterns in Indonesia, particularly in relation to wealth index quintiles. Most research on breastfeeding in Indonesia focuses on initiation and exclusive breastfeeding, with less attention paid to continued breastfeeding practices after the exclusive breastfeeding period. Comprehensive analyses of how wealth quintiles influence decisions to continue breastfeeding, taking into account factors such as maternal health service utilization, quality of antenatal care, and demographic characteristics, are still limited.

METHODS

This study is a quantitative cross-sectional study using secondary data from the 2023 Indonesian Health Survey (SKI) collected by the Ministry of Health of the Republic of Indonesia to analyze factors associated with breastfeeding sustainability in children aged 12 and 23 months with a population of 345,000 households with toddlers. This study used a two-stage sampling design, with census blocks as the Primary Sampling Unit (PSU) selected using Probability Proportional to Size (PPS) based on SP2020 data. In the second stage, households with toddlers were selected using systematic sampling based on the education level of the head of the household. Data cleaning resulted in a total of 13,424 children. Census block variables were treated as clusters (PSUs), and sampling weights were used to accommodate differences in sample selection probabilities. Then, through a data cleaning process, the analytical sample was determined with the following inclusion criteria (mother without twins, youngest child if there are more than one child, mother not breastfeeding due to HIV/AIDS or Hepatitis B, child without congenital abnormalities such as orofacial malformation or neurological disease) and exclusion criteria (incomplete data). After excluding respondents with incomplete data, the final analytical sample consisted of 10.769 respondents.

Data were collected through interviews using the Toddler Household Instrument (8 blocks), anthropometric measurements (digital scales, height/length measuring devices, LiLA), blood pressure (digital tensiometer), and blood tests (Hb, malaria, glucose, serum), managed through cleaning, coding, transformation, and weighting of data, analyzed with bivariate and multivariate analysis and complied with research ethics from the Health Ethics Commission of the National

Research and Innovation Agency (BRIN) No: 009/KE.03/SK/01/2025 with anonymous data in accordance with the guidelines of the Ministry of Health and BPS.

RESULTS

The results of this study are presented through descriptive, bivariate, and multivariate analyses to examine factors associated with continued breastfeeding among children aged 12–23 months in Indonesia. A total of 10,769 respondents were included in the analysis. The findings comprise the frequency distribution of study variables, associations between socioeconomic characteristics, maternal health service factors, and continued breastfeeding, as well as the identification of significant factors through multivariate logistic regression analysis. The detailed findings are presented in Tables 1–3.

Tabel 1. Frequency Distribution Variables

Variables	n	%
Continued breastfeeding		
Continued	9194	85.4
Not Continued	1575	14.6
Exclusive breastfeeding		
Yes	1427	13.3
No	9342	86.7
Ownership Index Quintile		
Bottom	1429	13.3
Lower	1910	17.7
Intermediate	2310	21.5
High	2445	22.7
Top	2675	24.8
Education		
No School	541	5
basic education	3573	33.2
Secondary Education	4258	39.5
higher education	2397	22.3
Place of Birth		
Government Hospital	2190	20.3
Private Hospital	2740	25.4
Private FKTP	3104	28.8
Government Fktp	2735	25.4
ANC		
In accordance	7690	71.4
It is not in in accordance with	3079	28.6
ANC Staffing		
Midwife	4759	44.2
Obstetricians	5370	49.9
Doctor	422	3.9
Health Workers / Others	218	2.0
ANC check-up location		
Government Hospital/Private Hospital	1341	12.5
Maternity home/clinic	1346	12.5
Community Health Center	2764	25.7
Independent practice of doctors/midwives	3531	32.8
Integrated Health Post	1787	16.6

Table 1 illustrates the distribution of key demographic and delivery-related characteristics among the study population, it can be observed that the majority of respondents (85.4%) continued breastfeeding with detil (56.8%) continued breastfeeding until the infant was 19 months old, while 26.8% continued until the infant was 23 months old. This indicates that continued breastfeeding practices among the respondents are relatively strong up to 19 months but experience a significant decline thereafter, with only about a quarter of respondents maintaining it until 23 months. Additionally, the table illustrates the distribution of other variables, 39% of the mother's education is secondary education place of birth 28.8% on private FKTP, frequency of ANC visits majority in accordance (71.4%), location of antenatal care 32.8% in independent practice of doctors/midwives , and exclusive breastfeeding practices majority not exclusive (86.7%). Overall, this distribution highlights the diversity among respondents, where demographic factors and maternal health services appear predominant, with potential implications for continued breastfeeding patterns. This interpretation underscores the need for interventions to enhance breastfeeding retention, particularly among groups with lower distribution rates.

Table 2. Cross-tabulation of Factors Related for Continued Breastfeeding

Variables	Continued Breastfeeding				P-Value
	Continued		Not Continued		
	n (9194)	%	n (1575)	%	
Ownership Index Quintile					
Bottom	1276	89.3	153	10.7	<0.001
Lower	1675	87.7	235	12.3	
Intermediate	1999	86.5	311	13.5	
High	2046	83.7	399	16.3	
Top	2198	82.2	477	17.8	
Exclusive breastfeeding					
Yes	1070	75	357	25	<0.001
No	8124	87	1218	13	
Education					
No school	474	87.6	67	12.4	
basic education	3159	88.4	414	11.6	<0.001
Secondary Education	3580	84.1	678	15.9	
higher education	1981	82.6	416	17.4	
Place of Birth					
Government Hospital	1780	81.3	410	18.7	
Private Hospital	2263	82.6	477	17.4	
Private FKTP	2700	87.0	404	13.0	
Government FKTP	2451	89.6	284	10.4	
ANC					
In accordance	6534	85.0	1156	15.0	0.062
It is not in in accordance with	2660	86.4	419	13.6	
ANC staff					
Midwife	4137	86.9	622	13.1	
Obstetricians	4492	83.6	878	16.4	
Doctor	365	86.5	57	13.5	<0.001
Health Workers / Others	200	91.7	18	8.3	
ANC check-up location					
Government Hospital/Private Hospital	1125	83.9	216	16.1	
Maternity home/clinic	1081	80.3	265	19.7	
Community Health Center	2375	85.9	389	14.1	<0.001

Independent practice of doctors/midwives	3046	86.3	485	13.7
Integrated Health Post	1567	87.7	220	12.3

Table 2 presents the cross-tabulation of the ownership index quintile variable has a significant relationship with continued breastfeeding , where mothers in the bottom owner index quintile have the highest percentage of breastfeeding sustainability (89.3%), which decreases as the owner index quintile increases.with ($p<0.001$), exclusive breastfeeding practices has a significant relationship continued breastfeeding ($p<0.001$) mothers who breastfed, although not exclusively, had a continuation rate of breastfeeding until the age of 12–24 months of 87%. Maternal education was significantly associated with the continuation of breastfeeding ($p < 0.001$), with the highest proportion observed among mothers with basic education (88.4%). Place of birth, ANC staff, ANC Check up location also has a significant relationship with the continued breastfeeding ($p < 0.001$), There is no significant relationship between ANC and the continued breastfeeding ($p = 0.062$).

Tabel 3. Multivariate Analysis of Factors Related for Continued Breastfeeding

Variables	P-value	AOR	95% CI	
			Lower	Upper
Ownership Index Quintile				
Bottom	0.003			
Lower	0.233	1.1	0.9	1.4
Intermediate	0.089	1.2	1	1.5
High	<0.001	1.4	1.1	1.8
Top	<0.001	1.4	1.1	1.8
Exclusive breastfeeding	<0.001	0.5	0.4	0.5
Education				
no school	0.005			
basic education	0.448	0.9	0.7	1.2
secondary education	0.343	1.1	0.9	1.5
higher education	0.479	1.1	0.8	1.5
Place of birth				
Government Hospital	<0.001			
Private Hospital	0.043	0.8	0.7	1
Private Primary Health Care	<0.001	0.6	0.5	0.7
Government Primary Health Care Facility	<0.001	0.5	0.5	0.6
ANC staff				
midwife	0.031			
Obstetricians	0.319	1.1	0.9	1.2
Doctor		0.9	0.7	1.3
other health workers	0.009	0.5	0.3	0.8
ANC check-up location				
Government Hospital/Private Hospital	<0.001			
Maternity home/clinic	<0.001	1.5	1.2	1.9
Community Health Center	0.117	1.2	1	1.4
Independent practice of doctors/midwives	0.686	1	0.9	1.2
Integrated Health Post	0.371	1.1	0.9	1.4

Based on Table 3, the results of multivariate analysis using logistic regression show that the most dominant variable in relation to the continued breastfeeding is ANC Check-up Location ($p= <0.001$) with an odds ratio (Exp(B)) of 1.5 (95% CI: 1.2 - 1.9) after being controlled by other variables such as, Owner Index Quintile, exclusive breastfeeding, education, place of birth, ANC staff, ANC check-up location. This means that mothers who attend ANC Check-up location in maternity home/clinic have a 1.5 times greater chance to continued breasfeeding.

DISCUSSION

Ownership Index Quintile and Continued Breastfeeding

This study found a significant association between ownership index quintile and continued breastfeeding ($p < 0.001$), with mothers in the lowest quintile exhibiting the highest proportion of continued breastfeeding, and this proportion declining progressively with increasing quintiles. This finding indicates the presence of a socioeconomic gradient in breastfeeding sustainability that operates in the opposite direction of the commonly assumed positive relationship between socioeconomic status and health-promoting behaviors.

Previous studies have reported similar patterns in low- and middle-income countries. (Bhattacharjee, Schaeffer, & Hay, 2021; Koffi, Kouame, & N'Guessan, 2023; Magare et al., 2020) demonstrated that mothers from lower socioeconomic groups tend to breastfeed for longer durations than those from higher socioeconomic strata. Comparable findings were observed in Bangladesh (Ekholuenetale et al., 2021) and Peru (Hernández-Vásquez et al., 2020), where breastfeeding continuation was more prevalent among mothers from poorer households.

One possible explanation is that mothers in lower ownership index quintiles face limited access to breast milk substitutes, making breastfeeding the most feasible and sustainable feeding option. Conversely, mothers in higher ownership index quintiles have greater access to formula milk and complementary feeding products, as well as greater exposure to formula marketing, which may contribute to earlier breastfeeding cessation. Additionally, higher socioeconomic status is often associated with formal employment, work-related time constraints, and workplace environments that are less supportive of prolonged breastfeeding. These factors may collectively explain why improvements in socioeconomic status do not necessarily translate into improved breastfeeding sustainability.

Exclusive Breastfeeding and Continued Breastfeeding

The results show that exclusive breastfeeding was significantly associated with continued breastfeeding ($p < 0.001$). Mothers who practiced exclusive breastfeeding during the first six months of their child's life were more likely to continue breastfeeding up to 23 months.

This finding supports the Socio-Ecological Model (Bronfenbrenner, 1979), which posits that health behaviors are shaped by interactions across individual, interpersonal, institutional, and societal levels. Successful exclusive breastfeeding may enhance maternal self-efficacy, confidence in milk sufficiency, and breastfeeding skills, thereby increasing the likelihood of sustained breastfeeding.

Previous research supports this relationship. In Indonesia, (Ariani et al., 2025; Farrag, Hashad, & El-Gilany, 2022) identified exclusive breastfeeding as a strong predictor of breastfeeding duration. Similarly, (UNICEF & WHO, 2023) reported that mothers who successfully practiced exclusive breastfeeding were more likely to maintain breastfeeding for longer periods. However, the present study also reveals an important paradox: the proportion of exclusive breastfeeding increased with higher ownership index quintiles, while continued breastfeeding was more prevalent among lower quintiles. This suggests that while higher socioeconomic groups may be better positioned to initiate exclusive breastfeeding, they may encounter greater challenges in maintaining breastfeeding over time.

Maternal Education and Continued Breastfeeding

Maternal education was significantly associated with continued breastfeeding ($p < 0.001$), with higher rates of breastfeeding continuation observed among mothers with no formal education or only primary education. The distribution of education across ownership index quintiles showed that

mothers with no formal education were concentrated in the lowest quintiles, whereas higher education levels increased substantially in the highest quintiles.

Study by Laksono & Wulandari, (2021) shows that maternal education is closely related to breastfeeding practices, particularly exclusive breastfeeding. However, higher education does not always guarantee long-term breastfeeding sustainability. Highly educated mothers tend to be more involved in formal employment, face time constraints, and work environments that are less supportive of continued breastfeeding practices. In the Indonesian context, higher educational attainment is often associated with formal employment and professional responsibilities, which may limit opportunities for continued breastfeeding despite greater knowledge of its benefits. This highlights the importance of structural and policy-level interventions to support breastfeeding among educated and working mothers.

Place of Birth and Continued Breastfeeding

Place of birth was significantly associated with continued breastfeeding ($p < 0.001$). Mothers who delivered in government primary health care facilities (FKTP) demonstrated higher rates of breastfeeding continuation compared to those who delivered in hospitals, particularly private hospitals. Place of birth shows a significant relationship with the ownership index quintile ($p < 0.001$), where government primary health care facilities (FKTP) are higher in the lowest quintile (26.5%) and decrease to 9.3% in the highest.

Study Sebayang et al., (2022); Koffi et al., (2023); Yotebieng et al., (2015) showed that primary health care facilities tend to provide more continuous and community-oriented breastfeeding counseling. In contrast, childbirth in private hospitals is often associated with higher medical interventions and exposure to formula feeding, which can hinder continued breastfeeding (Marthias, Anindya, et al., 2022). These findings emphasize the need to strengthen breastfeeding-supportive practices across all delivery settings, particularly in private health care facilities.

Antenatal Care (ANC) and Continued Breastfeeding

The study found no significant association between antenatal care (ANC) and continued breastfeeding ($p = 0.062$), although ANC was significantly associated with ownership index quintile. This suggests that ANC utilization may reflect socioeconomic disparities in access to maternal health services rather than directly influencing long-term breastfeeding practices.

Previous studies have reported contrasting findings. This is in line with the findings (Sebayang et al., 2022) which emphasize that the quality and substance of counseling during ANC are more important than the number or appropriateness of ANC visits alone.

ANC Staff and Continued Breastfeeding

ANC staff type was significantly associated with continued breastfeeding ($p < 0.001$). Midwives were more prevalent among lower ownership index quintiles and were associated with higher rates of breastfeeding continuation.

Previous research has highlighted the pivotal role of midwives in promoting breastfeeding through personalized counseling and sustained maternal support. Herwansyah et al., (2024) reported that breastfeeding counseling delivered by trained midwives significantly improved maternal knowledge and breastfeeding outcomes. Compared to a more clinically oriented approach, the interpersonal and continuous care provided by midwives may better support long-term breastfeeding practices. Midwives play a strategic role in breastfeeding education and counseling through an interpersonal approach and ongoing relationships with mothers (Marthias, et al., 2022). This approach has been shown to be more effective in building mothers' trust and motivation to maintain breastfeeding.

ANC Check-up Location as the Dominant Factor

Multivariate analysis identified ANC check-up location as the most dominant factor associated with continued breastfeeding (OR = 1.5; 95% CI: 1.2–1.9). Mothers who attended ANC at maternity

homes or clinics were 1.5 times more likely to continue breastfeeding than those who received ANC at other facilities, after controlling for ownership index quintile, exclusive breastfeeding, maternal education, place of birth, and ANC staff. This finding aligns with studies by (Sebayar et al., 2022) and (Marthias, Anindya, et al., 2022), which showed that community-based and continuity-oriented ANC services were associated with higher-quality breastfeeding counseling. Hodgkin et al. (2025) further emphasized that continuity of care at the same ANC location strengthens therapeutic relationships and enhances the effectiveness of breastfeeding education.

Furthermore, community-based and continuous ANC services improve the quality of breastfeeding counseling and the therapeutic relationship between mothers and health workers (Sebayang et al., 2022); (Hodgkin et al., 2025). A more personalized and supportive service environment plays a crucial role in supporting continued breastfeeding. Overall, the results of this study indicate that continued breastfeeding is influenced by the interaction between socioeconomic factors, exclusive breastfeeding practices, and the characteristics of maternal health services. Efforts to improve the sustainability of breastfeeding need to focus not only on increasing service coverage but also on improving the quality, continuity, and environment of breastfeeding-friendly services, particularly for upper socioeconomic groups who face distinct challenges in maintaining breastfeeding practices.

CONCLUSSION

Based on the study's results, there is a significant relationship between the ownership index quintile and continued breastfeeding ($p < 0.001$). The practice of exclusive breastfeeding ($p < 0.001$), maternal education ($p < 0.001$), place of birth ($p < 0.001$), ANC staff ($p < 0.001$), and ANC check-up location ($p < 0.001$) were also significantly associated with continued breastfeeding. However, antenatal care (ANC) adequacy was not significantly associated with continued breastfeeding ($p = 0.062$). Multivariate analysis showed that the most dominant factor associated with continued breastfeeding was the ANC check-up location ($p < 0.001$), with an odds ratio (OR) of 1.5 (95% CI: 1.2–1.9). Mothers who received ANC services at maternity homes or clinics were more likely to continue breastfeeding than those who received ANC at other health facilities, after controlling for ownership index quintile, exclusive breastfeeding practice, maternal education, place of birth, and ANC staff.

These findings suggest that efforts to improve continued breastfeeding in Indonesia should not only focus on increasing coverage of maternal health services but also emphasize the quality, continuity, and setting of ANC services. It is recommended that the government develop integrated breastfeeding and ANC education programs, strengthen the capacity of health workers particularly in primary care and maternity clinics and ensure equitable implementation of the National Health Insurance (JKN) to support access to high-quality, breastfeeding-friendly maternal health services across all socioeconomic groups.

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REFERENCES

Abdel-Razzaq, A. I., & Choudhury, T. (2021). Comparison of weighted and unweighted wealth index methods for assessing socioeconomic status. *Heliyon*, *7*(2), e06163. https://doi.org/10.1016/j.heliyon.2021.e06163

Adnan, Y., & Ekasari, R. (2025). Socioeconomic disparities in the utilization of maternal health facilities in hospitals: Evidence from the 2018 Indonesian Basic Health Research. *Kedokteran Sosial*, *18*(1), 45–52. https://doi.org/10.71164/socialmedicine.v18i01.2025.1763

Andriani, H., Kuo, H. W., & Pongou, R. (2022). The continuum of care in maternal, newborn and child health in Indonesia: Evidence from the Indonesian Demographic and Health Survey. *Jurnal Penelitian Kesehatan Masyarakat*, *11*(4), 22799036221127620. https://doi.org/10.1177/22799036221127619

Ariani, Lipoeto, N. I., Chundrayetti, E., Malini, H., Bachtiar, H., Sulastri, D., … Siahaan, S. S. (2025). The influence of postpartum visits on breastfeeding among traditional market traders in North Sumatra, Indonesia. *Jurnal Kesehatan Reproduksi Afrika*, *29*(7), 145–156. https://doi.org/10.29063/ajrh2025/v29i7.11

Bhattacharjee, N. V, Schaeffer, L. E., & Hay, S. I. (2021). Mapping inequalities in exclusive breastfeeding in low- and middle-income countries, 2000-2018. *Nature Human Behaviour*, *5*(8), 1027–1045. https://doi.org/10.1038/s41562-021-01108-6

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard University Press.

Ekholuenetale, M., Mistry, S. K., & Chimoriya, R. (2021). Socioeconomic inequalities in early initiation and exclusive breastfeeding practices in Bangladesh: findings from the 2018 demographic and health survey. *International Breastfeeding Journal*, *16*(1), 73. https://doi.org/10.1186/s13006-021-00420-1

Farrag, N. S., Hashad, R. E., & El-Gilany, A. H. (2022). Public breastfeeding practices and associated factors among Egyptian mothers. *Breastfeeding Medicine*, *18*(4), 292–299. https://doi.org/10.1089/bfm.2022.0177

Hernández-Vásquez, A., Chacón-Torrico, H., Vargas-Fernández, R., & Bendezu-Quispe, G. (2020). Factors associated with exclusive breastfeeding in Peruvian women based on the 2018 Demographic and Health Survey. *Revista Española de Nutrición Humana y Dietética*, *24*(1), 18–26. https://doi.org/10.14306/renhyd.24.1.942

Herwansyah, H., Febriawati, H., Yandrizal, Y., Nurjannah, N., & Pratama, M. Y. (2024). Understanding interpersonal influences on maternal health service utilization in community health centers: A mixed methods study in Indonesia. *Healthcare*, *13*(1), 42. https://doi.org/10.3390/healthcare13010042

Hodgkin, K., Joshy, G., & Lokuge, K. (2025). Pregnancy-related risks and trends in place of delivery: Insights from the Indonesian Demographic and Health Survey data. *MedRxiv*. https://doi.org/10.1101/2025.01.19.25320813

Koffi, I., Kouame, K., & N'Guessan, K. (2023). Factors associated with exclusive breastfeeding of children under six months of age in Cote d'Ivoire. *International Breastfeeding Journal*, *18*(1), 1–12. https://doi.org/10.1186/s13006-023-00573-1

Laksono, A. D., & Wulandari, R. (2021). The effects of mother's education on achieving exclusive breastfeeding in Indonesia. *BMC Public Health*, *21*(1), 1–10. https://doi.org/10.1186/s12889-020-10018-7

Magare, A. R., Adchitre, S. A., Jadhav, V. S., & Mahajan, S. M. (2020). Sociodemographic factors that influence the practice of exclusive breastfeeding. *International Journal of Medical Science and Clinical Invention*, *7*(12), 5061–5066. https://doi.org/10.18535/IJMSCI/V7I12.09

Marthias, T., Anindya, K., McPake, B., Atun, R., Arfyanto, H., Hulse, E., & Mirelman, A. J. (2022). The relationship between Indonesian national health insurance, effective maternal health coverage and neonatal mortality rate: multilevel interrupted time series analysis 2000–2017. *Journal of Epidemiology and Community Health*, *76*(12), 1043–1050. https://doi.org/10.1136/jech-2021-217213

Marthias, T., McAllister, S., & Nugroho, A. (2022). Antenatal care and breastfeeding practices in Indonesia. *Maternal & Child Nutrition*, *18*(2), e13323. https://doi.org/10.1111/mcn.13323

Mawa, R. (2023). Socioeconomic status and exclusive breastfeeding in infants in a cross-sectional study in Uganda. *BMC Nutrition*, *9*(1), 44. https://doi.org/10.1186/s40795-023-00698-x

Neves, P. A. R., Barros, A. J. D., Baker, P., Piwoz, E., Santos, T. M., Gatica-Domínguez, G., … Victora, C. G. (2020). Consumption of breast milk, formula, and other non-human milk by children under two years of age. *MedRxiv*. https://doi.org/10.1101/2020.06.02.20120519

Poirier, M. J. P. (2024). A systematic comparison of household income, consumption, and assets to measure health inequalities in low- and middle-income countries. *Scientific Reports*, *14*(1), 3170. https://doi.org/10.1038/s41598-024-54170-1

Poirier, M. J. P., Grépin, K. A., & Grignon, M. (2020). Approaches and alternatives to the wealth index for measuring socioeconomic status using survey data. *Social Indicators Research*, *148*(1), 1–46. https://doi.org/10.1007/s11205-019-02187-9

Sebayang, S. K., Efendi, F., & Astutik, E. (2022). Women's empowerment and the use of antenatal care services in Indonesia. *BMC Public Health*, *22*(1), 1–9. https://doi.org/10.1186/s12889-022-12644-1

Sebayar, S. K., Efendi, F., Astutik, E., Hadisuyatmana, S., Has, E. M. M., & Kuswanto, H. (2022). Utilization of postpartum care services in Indonesia and its relationship to women's empowerment: Analysis of the 2017 Indonesian Demographic Health Survey data. *Journal of Maternal and Child Health*, *26*(4), 847–859. https://doi.org/10.1007/s10995-021-03324-y

UNICEF. (2023). *Global breastfeeding scorecard 2023*.

UNICEF. (2025). *The Extension of the 2025 Maternal, Infant and Young Child Nutrition Targets to 2030*.

United Nations Children's Fund. (2025). *Breastfeeding: A mother's gift, for every child*.

World Health Organization. (2023a). *Breastfeeding*. WHO.

World Health Organization. (2023b). *Feeding infants and young children*. WHO.

Xie, K., Marathe, A., & Deng, X. (2023). An alternative approach to creating a wealth index: a case study of Mozambique. *BMJ Global Health*, *8*(8), e012639. https://doi.org/10.1136/bmjgh-2023-012639

Yotebieng, M., Labbok, M., Soeters, H. M., Chalachala, J. L., Lapika, B., Vitta, B. S., & Behets, F. (2015). Ten Steps to Successful Breastfeeding programme to promote early initiation and exclusive breastfeeding in DR Congo: a cluster-randomised controlled trial. *The Lancet Global Health*, *3*(9), e546–e555. https://doi.org/10.1016/S2214-109X(15)00012-1