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The Relationship Between Early Initiation Of Breastfeeding (EIB) And Exclusive Breastfeeding History With Stunting Severity Among Children Under Five At "X" Public Health Center Indragiri Hilir

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Abstract

Stunting remains a significant chronic nutritional challenge in Indonesia. Early Initiation of Breastfeeding (EIB) and Exclusive Breastfeeding (EBF) are critical interventions that support child growth and serve as foundational strategies for stunting prevention. This study aims to investigate the relationship between a history of EIB and EBF and the severity of stunting (classified as stunted and severely stunted) among affected children under five within the catchment area of Public Health Center "X" in Indragiri Hilir Regency.An observational analytic design with a cross-sectional approach was employed, utilizing secondary data from the 2025 Stunting Audit. The study population consisted of 45 stunted children under five, selected through a total sampling technique. Data were analyzed using the Chi-Square test with a 95% confidence level (α=0,05) and the calculation of Odds Ratios (OR).The results indicated that the majority of respondents were categorized as severely stunted (66.7%), had a history of EIB (55.6%), and received EBF (55.6%). No significant correlation was found between a history of EIB and stunting severity (p=0,670; OR=1,313; 95%CI=0,373–4,616). Conversely, a significant association was observed between EBF and stunting severity (p=0,034; OR=0,250; 95%CI=0,067–0,931). These findings suggest that exclusive breastfeeding serves as a protective factor against increased stunting severity, whereas EIB did not demonstrate a significant relationship in this specific population. Consequently, enhancing EBF coverage must be prioritized as a pivotal component of stunting prevention and control programs.

Keywords: Stunting, Stunting Severity, Exclusive Breastfeeding, Early Initiation Of Breastfeeding, Children Under Five.

INTRODUCTION

Stunting is a chronic nutritional disorder characterized by growth failure resulting from prolonged nutrient deficiency, recurrent infections, and suboptimal environmental conditions, causing a child's height to be significantly below the median for their age. In Indonesia, stunting classifications are governed by the Ministry of Health Regulation No. 2 of 2020 concerning Child Anthropometric Standards. Under these guidelines, children under 60 months are categorized as "stunted" if their height-for-age Z-score (HAZ) is less than -2 standard deviations (SD) and "severely stunted" if it is less than -3 SD (Kementerian Kesehatan a, 2022)(Kementerian Kesehatan b, 2020).

Data from the 2024 Indonesian Nutritional Status Survey (SSGI) reported a stunting prevalence of 19.8%, reflecting a 1.7% decrease from the 2023 Indonesian Health Survey. Despite this decline, the figure remains above the National Medium-Term Development Plan (RPJMN) target of 14.2% set for 2019 and the long-term goal of 5% by 2045. Within Riau Province, Indragiri Hilir Regency exhibits the highest burden of stunting, with a prevalence of 25% in 2024. Furthermore, the catchment area of Public Health Center "X" has been identified as the most affected locality within the regency, with 116 recorded cases of stunted children (Kementerian Kesehatan c, 2024) (Puskesmas X, 2026).

The onset of stunting is often preceded by fetal growth restriction during pregnancy, which continues into the postnatal period. Stunting adversely affects a child's physical development and cognitive function, thereby compromising their future productivity. Moreover, stunted children are

predisposed to degenerative diseases in adulthood—including diabetes mellitus, hypertension, and dyslipidemia—driven by central adiposity and insulin resistance due to impaired lipid oxidation. Consequently, stunting poses a significant long-term threat to the quality of Indonesia's human capital (Kementerian Kesehatan d, 2025)

A pivotal intervention in stunting prevention is the implementation of Early Initiation of Breastfeeding (EIB). EIB is defined as the process of allowing a newborn to breastfeed within the first hour of life through immediate skin-to-skin contact with the mother. This practice is empirically proven to increase the success rates of exclusive breastfeeding, strengthen maternal-infant bonding, enhance neonatal immunity through colostrum intake, and reduce the risk of neonatal infections. Research conducted at the Rangkasbitung Public Health Center in 2023 demonstrated a significant association between EIB implementation and the incidence of stunting among children aged 24–59 months (p=0.028). Children who did not undergo EIB were found to be at a higher risk of stunting compared to those who di (Roslina and Zahrotunnisa, 2024).

In addition to EIB, Exclusive Breastfeeding (EBF) during the first six months of life is a critical factor in growth failure prevention. Breast milk provides a complete and balanced nutritional profile tailored to infant requirements, alongside essential antibodies that protect against infectious diseases. Infants who are not exclusively breastfed tend to be more vulnerable to growth disturbances due to suboptimal nutrient intake and increased morbidity from infections. Findings from the Pokenjior Public Health Center service area in 2023 indicated a significant relationship between EBF and stunting incidence (p=0.002), noting that the majority of stunted children in the study did not receive exclusive breastfeeding for the recommended six-month period (Roslina and Zahrotunnisa, 2024).

Furthermore, a study by Paramesti et al. (2024) confirmed that EBF significantly correlates with stunting outcomes (p=0.034). The synergistic combination of EIB and EBF has also been significantly associated with reduced stunting incidence (p=0.018), suggesting that these practices are mutually reinforcing interventions (Paramesti, Balgis and Putri, 2024). Recent SSGI data analyses further corroborate that EBF serves as a robust protective factor contributing to the declining prevalence of stunting in Indonesia (Natasia, Rahmawati and Ardianti, 2025)

Indragiri Hilir Regency remains one of the regions in Riau Province grappling with pediatric nutritional challenges. Various determinants, including socioeconomic status, maternal education levels, access to healthcare services, infant and young child feeding (IYCF) practices, and the efficacy of maternal and child health (MCH) programs, influence the local stunting landscape. As a primary healthcare facility, Public Health Center "X" plays a strategic role in improving EIB and EBF coverage as part of the accelerated stunting reduction agenda.

Despite the implementation of various promotive and preventive programs, stunting remains prevalent among children under five in the Public Health Center "X" service area. Therefore, this study is conducted to evaluate the relationship between EIB and EBF history and stunting severity. The findings are expected to provide a localized evidence base for the optimization of MCH programs, specifically in scaling up EIB and EBF coverage to mitigate stunting in Indragiri Hilir Regency.

RESEARCH METHODS

This study employed a quantitative research design utilizing an observational analytic approach with a cross-sectional framework. The research was conducted within the catchment area of Public Health Center "X" in Indragiri Hilir Regency, utilizing secondary data derived from the 2025 Public Health Center "X" Stunting Audit.The study population comprised all 45 children under five who underwent stunting audits in 2025. A total sampling technique was applied, whereby all stunted children meeting the inclusion criteria were enrolled as research subjects.The independent variables in this study were Early Initiation of Breastfeeding (EIB) and Exclusive Breastfeeding (EBF). The dependent variable was stunting severity, classified into two categories: stunted and severely stunted. Stunting status was determined based on the Height-for-Age (HFA) index, with stunting defined as a

Z-score < -2 standard deviations (SD) according to WHO Child Growth Standards. EIB history was categorized as "Yes" or "No." Exclusive breastfeeding was categorized as "Yes" if the infant received only breast milk for the first six months of life, and "No" if the infant received supplementary food or liquids prior to reaching six months of age.Data analysis was performed at two levels. Univariate analysis was conducted to describe the frequency distribution of respondent characteristics, EIB history, EBF status, and stunting severity. Bivariate analysis was performed using the Chi-Square test with a 95% confidence level (α = 0,05) to determine the relationship between EIB and EBF with stunting severity. The magnitude of risk was expressed through Odds Ratio (OR) values along with 95% Confidence Intervals (CI).

RESULTS AND DISCUSSION

Results

Characteristics of Research Subjects

This study utilized secondary data from 45 stunted children under five residing within the catchment area of Public Health Center "X." Table 1 presents the baseline characteristics of the research subjects.

Table 1. Characteristics of Research Subjects

No	Variable	Frequency (n)	Percentage (%)
1	Stunting Severity		
	Stunted	15	33.3
	Severely Stunted	30	66.7
2	Early Initiation of Breastfeeding (EIB)		
	Yes	25	55.6
	No	20	44.4
3	Exclusive Breastfeeding (EBF)		
	Ya	25	55.6
	Tidak	20	44.4
4	Weight-for-Age (WFA) Status		
	Normal	2	4.4
	Underweight	24	53.3
	Severely Underweight	19	42.2
5	Gender		
	Male	21	46.7
	Female	24	53.3
6	History of Illness		
	No	38	84.4
	Yes	7	15.6

Source: Secondary Data (Audit of Stunted Children, Public Health Center X, 2025)

Based on Table 1, the majority of subjects were classified as severely stunted (66.7%). Regarding nutritional interventions, 55.6% of the subjects had a history of Early Initiation of Breastfeeding (EIB) and received Exclusive Breastfeeding (EBF). In terms of demographics, the sample was predominantly female (53.3%). Additionally, the Weight-for-Age (WFA) indicators revealed that 53.3% of the subjects were categorized as underweight.

Association of EIB and EBF with Stunting Severity

Table 2. Association between EIB, EBF, and Stunting Severity

No	Independent Variable	Stunting Severity		OR	CI 95%		*P Value*
		Stunted	Severely Stunted		*Lower*	*Upper*	
1	EIB Yes No	 9 6	 16 14	1.313	0.373	4.616	0,67
2	EBF Yes No	 5 10	 20 10	0.250	0.067	0.931	0.034

Source: Secondary Data (Audit of Stunted Children, Public Health Center X, 2025)

Table 2 illustrates that children who received EIB had a 1.313 times higher likelihood of being in the "stunted" category rather than "severely stunted," although this association was not statistically significant (p=0.670; 95% CI = 0.373–4.616). Conversely, Exclusive Breastfeeding (EBF) demonstrated a significant association with stunting severity (p=0.034). The Odds Ratio (OR) of 0.250 indicates that children who received exclusive breastfeeding had a 75% lower risk of being severely stunted compared to those who did not (95% CI = 0.067–0.931).

Discussion

The Relationship Between Early Initiation of Breastfeeding (EIB) and Stunting Severity

The findings of this study indicate that there is no significant relationship between Early Initiation of Breastfeeding (EIB) and stunting severity among children under five in the catchment area of Public Health Center "X" (p=0.670). An Odds Ratio (OR) of 1.313 suggests that children who underwent EIB were 1.313 times more likely to be categorized as "stunted" (rather than "severely stunted"), although this association did not reach statistical significance.

The lack of a significant correlation between EIB and stunting severity may be attributed to the fact that stunting is a chronic nutritional issue with multifactorial etiology. Stunting is influenced by various interacting determinants, such as maternal nutritional status during pregnancy, parental height, low birth weight (LBW), recurrent infectious diseases, adequate infant and young child feeding (IYCF) practices, environmental sanitation, and socioeconomic factors. Consequently, EIB, as an early-life intervention, may not directly determine the severity of stunting observed during the toddler years (Apriastini *et al.*, 2024).

These results align with a study by Paramesti et al. (2024), which found that a history of EIB had no significant relationship with the incidence of stunting (p=0.090). This non-significant finding was attributed to several factors, including subjects who practiced EIB but failed to continue with exclusive breastfeeding, inadequate nutritional intake, and high morbidity from recurrent infections (Paramesti, Balgis and Putri, 2024).

Despite the absence of a significant statistical association in this study, the implementation of EIB remains critical. EIB offers numerous clinical benefits, including the prevention of neonatal hypothermia, the transfer of antibodies via colostrum, and the stabilization of neonatal blood glucose levels in the hours following delivery (Nasrullah, 2021).

The Relationship Between Exclusive Breastfeeding (EBF) and Stunting Severity

The results demonstrate a significant relationship between exclusive breastfeeding and stunting severity (p=0.034). An OR of 0.250 indicates that children who received EBF had 75% lower odds of being classified in the more severe stunting category.

This study underscores that exclusive breastfeeding serves as a protective factor against stunting severity. Breast milk provides a complete nutritional profile; thus, sufficient breastfeeding for the first six months fulfills an infant's physiological requirements. Exclusive breastfeeding yields various positive outcomes, including the prevention of infectious diseases, promotion of brain cell development, and overall optimal growth and development (Khotimah *et al.*, 2024).

These findings are consistent with research by Paramesti et al. (2024), which reported a significant association between EBF and stunting incidence (p=0.034). That study suggested that infants who do not receive exclusive breastfeeding face a higher risk of growth disturbances compared to those who do. Similar results were reported by Batubara et al. (2024), who found a significant correlation between EBF and stunting severity (p=0.002), noting a higher proportion of stunting among children without a history of exclusive breastfeeding (Paramesti, Balgis and Putri, 2024); (Batubara *et al.*, 2023).

The evidence from this study reinforces recommendations for relevant health institutions to strengthen promotive and preventive efforts regarding the importance of EBF for the first six months as a primary intervention for stunting prevention. Consequently, there is a need for enhanced education for pregnant and lactating women regarding the benefits of EBF, alongside bolstered support from families and healthcare providers to ensure the success of breastfeeding practices.

CONCLUSIONS

Based on the findings of this study regarding the relationship between a history of Early Initiation of Breastfeeding (EIB) and Exclusive Breastfeeding (EBF) with stunting severity among affected children in the catchment area of Public Health Center "X," Indragiri Hilir Regency, the following conclusions are drawn:A history of EIB does not demonstrate a significant association with stunting severity (p = 0.670). This suggests that the implementation of EIB alone is insufficient to influence the clinical severity of stunting. As stunting is a multifactorial condition, it is governed by a complex interplay of various external determinants, including maternal nutritional status, parenting practices, the incidence of infectious diseases, environmental conditions, and socioeconomic factors.In contrast, Exclusive Breastfeeding (EBF) shows a statistically significant relationship with stunting severity (p = 0.034). Children who received EBF were found to have a lower probability of experiencing more severe stunting compared to those who were not exclusively breastfed. These results underscore that EBF serves as a critical protective factor in supporting child growth and development while mitigating growth failure. Consequently, enhancing the coverage and success rates of exclusive breastfeeding must remain a primary focus within public health programs aimed at the prevention and management of stunting.

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