

Exclusive Breastfeeding and the Incidence of Stunting in Toddlers

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ABSTRACT

Stunting is a condition of growth failure due to chronic malnutrition, resulting in children being too short for their age, and typically occurs in toddlers. The occurrence of stunting in toddlers is influenced by several interrelated multifactorial causes. Stunting prevention can be achieved by fulfilling nutritional needs during the First 1000 Days of Life. This study aimed to determine the relationship between exclusive breastfeeding and the incidence of stunting. This was a quantitative study using a cross-sectional design, conducted at the Kemalo Abung Health Center from July to October 2024. The respondents consisted of 92 participants selected using a purposive sampling technique. The inclusion criteria were mothers with toddlers aged 2–3 years. Data collection instruments included a questionnaire and a microtoise. Data were analyzed using the chi-square test. The results showed that there was no significant relationship between exclusive breastfeeding and the incidence of stunting (p-value = 0.814).

Keywords: Exclusive Breastfeeding, Stunting, Toddlers

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INTRODUCTION

Stunting is a condition of growth failure that occurs in toddlers as a result of chronic malnutrition, causing children to be too short for their age. Stunting is a nutritional problem that has become a national issue, as it negatively impacts the quality of future human resources. Children with stunting are at a higher risk of obesity and other diseases. The negative impact of stunting also extends to reproductive health (1). According to the World Health Organization (WHO), the global prevalence of stunting in children under five was 22%, or 149.2 million children, in 2020 (2).

Based on data from the Basic Health Research (Riskesdas), the national stunting rate in Indonesia was 37.2% in 2013, which declined to 30.8% in 2018 (3). The Indonesian Nutrition Status Survey (SSGI) conducted by the Ministry of Health reported a decrease in stunting prevalence from 24.4% in

2021 to 21.6% in 2022 (4). However, this figure is still above the WHO target of below 20%. In Lampung Province, the stunting prevalence in 2013 was 37.2% and decreased to 27.28% in 2018. In North Lampung, the prevalence was 32.44% in 2013 and declined to 26.64% in 2018 (5).

Stunting in toddlers is caused by multiple interrelated and multidimensional factors, which are categorized into direct and indirect causes. One of the direct factors is exclusive breastfeeding. Stunting prevention can be achieved by ensuring adequate nutrition during the First 1000 Days of Life (HPK), a critical period that determines an individual's future physical growth, intelligence, and productivity (6).

During the exclusive breastfeeding phase, infants receive all essential nutrients solely from breast milk for the

first six months without any additional food or drink. Infants under six months have immature digestive systems that are not ready to process food other than breast milk, which can lead to digestive disorders such as diarrhea or constipation when other foods are introduced prematurely (7). Toddlers who do not receive exclusive breastfeeding tend to have insufficient nutrient intake and are at a higher risk of stunting (8).

A study conducted in Malawi found that exclusively breastfed infants were, on average, 1.08 cm taller and 0.46 kg heavier than those who were not exclusively breastfed (9). Previous studies have shown that toddlers who did not receive exclusive breastfeeding had a 35 times greater risk of developing stunting compared to those who did (10). However, a study by Gustada et al. (2019) reported that exclusive breastfeeding was not significantly associated with stunting in toddlers in Bogor Regency (p -value = 0.661).

According to secondary data from the North Lampung Health Profile in 2022, Kemalo Abung Health Center was designated as one of the stunting loci, with 29 children categorized as short and 15 as severely short. Preliminary data revealed that mothers who did not provide exclusive breastfeeding cited reasons such as insufficient breast milk production and lack of awareness about the importance of exclusive breastfeeding. Based on these findings, this study aims to examine the relationship between exclusive breastfeeding and the incidence of stunting in toddlers at Kemalo Abung Health Center. This research is important because exclusive breastfeeding is a key factor in preventing stunting in toddlers.

METHODS

This study is a quantitative research with a correlational design aimed at determining the relationship between two variables. A cross-sectional approach was used to analyze the relationship between exclusive breastfeeding and stunting in toddlers, with data collected at a single point in time (11). The study was conducted at Kemalo Abung Health Center in 2024 due to the high prevalence of stunting cases in the area.

The study population consisted of all mothers with toddlers registered at Kemalo Abung Health Center, totaling 1,127 children. The sample size was determined using the Slovin formula, resulting in 92 respondents. The inclusion criteria were: mothers with stunted toddlers, mothers with toddlers aged 2–3 years, and mothers who were willing to participate as respondents.

The independent variable was exclusive breastfeeding, and the dependent variable was the incidence of stunting. Primary data were collected using a questionnaire on exclusive breastfeeding and measurements with a microtoise and Z-score to determine the stunting status of the toddlers. Data analysis included univariate and bivariate analyses using the chi-square test, with a significance level set at 0.05, performed using SPSS software.

RESULTS AND DISCUSSION

The results of this study showed that 67 toddlers (72.8%) received exclusive breastfeeding, while 25 toddlers (27.2%) did not. The provision of exclusive breastfeeding has been regulated by the Government of the Republic of Indonesia under Government Regulation No. 33 of 2012 concerning Exclusive Breastfeeding, which mandates that every mother must provide exclusive

Table 1. Distribution of Respondents Based on Child's Gender, Mother's Education, Occupation, and Income Among Toddlers in the Working Area of Kemalo Abung Public Health Center

Characteristic	F	%
Child's Gender		
Male	42	45.7
Female	50	54.3
Mother's Education		
Primary (Elementary– Junior High)	41	44.6
Secondary (Senior High School)	37	40.2
Higher Education (University)	14	15.2
Mother's Occupation		
Employed	44	47.8
Unemployed	48	52.2
Mother's Income		
< Regional Minimum Wage (RMW)	75	81.5
>RMW	17	18.5

breastfeeding to her newborn (12). The success of exclusive breastfeeding can be influenced by several factors, one of which is whether the mother is employed. In this study, 48 mothers (52.2%) were not employed. Unemployed mothers generally have more time to care for their babies, including providing exclusive breastfeeding. According to (13), breastfeeding is done by mothers in the morning, afternoon, and evening, with a frequency of 8–12 times per day, which is more feasible for mothers who do not work. On the other hand, babies who did not receive exclusive breastfeeding were typically cared for by mothers who worked.

In this study, 44 mothers (47.8%) were employed. Working mothers often have less opportunity to breastfeed directly due to work commitments outside the home (14). As a result, these mothers often replace breast milk with formula. However, the absence of exclusive breastfeeding increases the risk of

Table 2. Distribution of Respondents Based on Exclusive Breastfeeding Frequency and Stunting Incidence Among Toddlers in the Working Area of Kemalo Abung Public Health Center

Characteristic	F	%
Exclusive Breastfeeding		
Yes	67	72.8
No	25	27.2
Stunting Incidence		
Stunted	54	58.7
Not Stunted	38	41.3

infectious diseases in infants. Although formula milk can meet nutritional needs, it does not contain antibodies like breast milk, making infants and toddlers more vulnerable to illness.

This study found that 54 toddlers (58.7%) were stunted. Stunting can impair the growth and development of neurons, thereby affecting cognitive development. Various factors contribute to stunting, including maternal education and household income. Education level influences an individual's knowledge. In this study, the majority of mothers had only a primary level of education, with 41 mothers (44.6%). However, low education does not necessarily mean a mother lacks adequate knowledge about nutrition (15).

According to the researchers, low maternal knowledge affects the attitudes and behaviors related to providing balanced nutrition to toddlers during the "golden period" of growth. Maternal education plays a significant role in fulfilling a child's nutritional needs to prevent stunting. Well-educated mothers are more likely to take early preventive measures by seeking information about balanced nutrition, either through mass media or by visiting health services for child health check-ups and nutritional consultations (16).

Factors contributing to stunting include unbalanced food intake related to

Table 3. Association Between Exclusive Breastfeeding and Stunting Incidence Among Toddlers in the Working Area of Kemalo Abung Public Health Center

Breastfeeding Type	Stunting Incidence				Total		OR 95% CI	p- value
	Stunted		Not Stunted					
	n	%	n	%	n	%		
Exclusive Breastfeeding	40	74.1	27	71.1	67	72,8	1.164 (0.460 – 2.946)	0.814
Non-Exclusive Breastfeeding	14	25.9	11	28.9	25	27.2		
Total	54	100	38	100	92	100		

nutritional content (carbohydrates, protein, fat, minerals, vitamins, and water), low birth weight history, illness, maternal knowledge, and exclusive breastfeeding. The quality and quantity of family food consumption depend on household income (17). Families with low economic status often have limited access to nutritious food. Their diets tend to lack variety and essential nutrients, particularly protein, vitamins, and minerals, increasing the risk of malnutrition. These limitations raise the likelihood of stunting in toddlers (15). In this study, 75 families (81.5%) had incomes below the regional minimum wage (UMR).

The findings showed no significant relationship between exclusive breastfeeding and the incidence of stunting (p-value = 0.814). This is in line with previous research, which also found no significant relationship between exclusive breastfeeding and stunting (p-value = 0.536) (18). Some toddlers who received exclusive breastfeeding still experienced stunting, suggesting that other, more influential factors may contribute to stunting, such as household income and maternal education. This result is consistent with other research (19), which concluded that there was no significant relationship between a history of exclusive breastfeeding and stunting in toddlers (p = 0.774).

According to Miranti Potutu in (20), exclusive breastfeeding is not a risk

factor for stunting, as there are other contributing risk factors such as low birth weight, nutritional intake, family income, and infectious diseases. It is important to emphasize that exclusive breastfeeding is not the only nutritional aspect to consider in stunting prevention. The provision of complementary feeding (MPASI) must also be managed properly, including appropriate timing and composition to meet the child's nutritional needs (21). Nevertheless, breast milk remains an irreplaceable source of nutrition, especially during the first six months of life.

However, the results of this study contradict several other studies that found a significant relationship between exclusive breastfeeding and stunting. For example, a study by Windi, Supriyatu, and Nurdiawati (2024) (22) reported a significant association between exclusive breastfeeding and stunting (p-value = 0.001). Breast milk provides nutrition that supports optimal growth and development. Infants who do not receive adequate breast milk may experience poor nutritional intake, leading to malnutrition, including stunting.

One of the benefits of exclusive breastfeeding is its support for infant growth, as calcium from breast milk is more efficiently absorbed than that from formula (23). Stunting is a chronic nutritional issue that occurs during the first 1000 days of life and affects a child's physical and mental

development. One of the primary causes of stunting is inadequate nutritional intake during early childhood, where exclusive breastfeeding provides the best nutrition during the first six months of life.

LIMITATIONS

The main challenge encountered in this study was the geographical location, as the infrastructure was somewhat limited and the distance between the Community Health Center (Puskesmas) and the Posyandu areas in each village was relatively far.

RESEARCH ETHIC

This research was conducted after receiving ethical approval from the Ethics Committee of Poltekkes Kemenkes Tanjungkarang, with approval letter No. 543/KEPK-TJK/X/2024. Throughout the research process, the researcher adhered strictly to research ethics, including principles of beneficence, respect for human dignity, justice, protection of the rights and well-being of respondents, and confidentiality. These ethical considerations were explained in the informed consent form, which was signed by respondents who agreed to participate in the study.

CONFLICT OF INTEREST

There were no conflicts of interest in conducting this study.

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CONCLUSION

Based on the results of this study, it can be concluded that there is no significant relationship between exclusive breastfeeding and the incidence of stunting ($p\text{-value} > 0.05$). In light of this, the Community Health Center is encouraged to continue providing regular education to the community regarding various factors contributing to stunting, aside from exclusive breastfeeding.

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