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THE FAILURE OF EXCLUSIVE BREASTFEEDING ON THE INCIDENCE OF STUNTING AMONG TODDLERS

Anisa Purnamasari[1*], Wa Ode Aisa Zoahira[1], Apriyanti[1], I Wayan Romantika[2], Amzal Mortin Andas[3]
[1]Faculty of Health Sciences, Universitas Mandala Waluya, Kendari, Southeast Sulawesi, Indonesia
[2]STIKes Karya Kesehatan, Kendari, Southeast Sulawesi, Indonesia
[3]Faculty of Health and Pharmacy, Universitas Bani Saleh, Bekasi, Indonesia
*E-mail : anisa.purnamasari91@gmail.com

Abstract

Introduction: Stunting is caused by chronic and permanent nutritional deficiencies in the growth of toddlers. The World Health Organization has positioned Indonesia as the third country with the highest prevalence of stunting in Southeast Asia. In Southeast Sulawesi, stunting ranks fifth out of the ten provinces with the highest prevalence. The prevalence data of stunting in Southeast Sulawesi for children under five years old in 2022 was 27.7%. The number of stunted toddlers in Kendari City increased to 365 individuals in 2022, with the Puuwatu district showing the highest prevalence. Infant development is hindered due to insufficient nutritional intake, particularly exclusive breastfeeding. Failure in exclusive breastfeeding leads to long-term consequences. Objective: To assess the impact of the Failure of Exclusive Breastfeeding on the Incidence of Stunting Among Toddlers in the catchment area of Puuwatu Community Health Center. Methods: A cross-sectional research design was employed using a non-probability sampling method involving 84 respondents. Data collection was conducted using the Breastfeeding Self-efficacy Scale-Short Form (BSES-SF). Result: The research findings failure of exclusive breastfeeding variable is p-value 0.044 < 0.05 for the mindset in breastfeeding indicator, p-value 0.030 < 0.05 for the emotional reaction in breastfeeding indicator, and p-value 0.005 < 0.05 for the breastfeeding behavior indicator, indicating a significant association between the Failure of Exclusive Breastfeeding and the Incidence of Stunting Among Toddlers in the catchment area of Puuwatu Community Health Center. Conclusion: Based on this research, the crucial role of Exclusive Breastfeeding in the growth and development of toddlers is emphasized, underscoring its significance as an integral element in the nursing care process administered by healthcare professionals.

Keywords: *Stunting, Exclusive Breastfeeding, Toddlers, Nursing, Southeast Sulawesi*

Introduction

The first thousand days of life is a period that spans first thousand days from conception in the womb (270 days) to the child reaching 2 years of age (730 days). This period is referred to as the golden period and is also considered a critical time, which, if not utilized effectively, can lead to permanent, irreversible damage. Stunting is a hidden tragedy that occurs due to the chronic lack of nutrition during the first thousand days of a child's life (Purnamasari, Andas, et al., 2022). The resulting damage leads to irreversible developmental issues. One vulnerable group to nutritional problems is toddlers, as during the toddler phase, a significant amount of nutrients is required for their growth and development. Mistakes in meeting the nutritional needs of toddlers can result in stunting (Black et al., 2013).

Stunting depicts chronic malnutrition during the early stages of growth and development. This condition is represented by high z-scores for height for age from 0-2 years using length-for-age, and from 3-5 years using height-for-age. According to the World Health Organization (WHO), globally, there are approximately 22.9% or 154.8 million children under five years old affected by stunting. In Asia, there are 87 million stunted children, 59 million in Africa, and 6 million in Latin America and the Caribbean (World Health Organization, 2021). Based on data collected by the WHO on the

prevalence of stunted children, Indonesia ranks third in the highest prevalence in the Southeast Asia Regional (SEAR) region. The average prevalence of stunted children in Indonesia from 2005 to 2017 was 36.4% (Kemenkes RI, 2021).

The occurrence of Stunting in toddlers is a major nutritional problem faced by Indonesia. According to the Monitoring of Nutritional Status data over the last three years, stunting has the highest prevalence compared to other nutritional problems such as undernutrition, wasting, and obesity. The prevalence of stunted children in Southeast Sulawesi increased from 14.4% in 2019 to 21.7% in 2020, then decreased to 16.4% in 2021, and reached 27.7% in 2022. Based on data from the Recapitulation of Toddler Growth Monitoring Results in 2022 in Kendari City, based on the Nutritional Status Index for Height-for-Age, out of 15 community health centers, 4 of them had stunting cases, namely Puuwatu, Kendari, and Kendari Barat. Puuwatu Community Health Center had the highest prevalence of stunting (Dinas Kesehatan Provinsi Sulawesi Tenggara, 2022).

Method

This type of research is a descriptive analytical quantitative study with a Cross-Sectional Study approach with non-probability sampling (Purnamasari, Prima, et al., 2022) The independent variable in this research is the failure of exclusive breastfeeding, while the dependent variable is the incidence of stunting. This study will be conducted in the working area of Puuwatu Community Health Center. The population in this study comprises all mothers with children aged 0-59 months, totaling 194 mothers. The sample size for this study is 85 breastfeeding mothers, selected using consecutive sampling technique, is a sampling technique in which every subject meeting the criteria of inclusion is selected until the required sample size is achieved, including approval ethics committees from the Health Research Ethics Commission.

The data collection method in this study is an observational method that utilizes a questionnaire. The questionnaire used is the Breastfeeding Self-Efficacy Scale-Short Form (BSES-SF). The questionnaire consists of five indicators: (1) respondents' socio-demographic characteristics, (2) negative or positive mindset in breastfeeding, (3) emotional reactions in dealing with breastfeeding difficulties, (4) persistent efforts made to achieve breastfeeding success, and (5) breastfeeding behaviors. Socio-demographic characteristics include the mother's age, mother's educational level, and mother's employment status. There are five response options in the questionnaire statements using a Likert scale: (1) Very confident, (2) Confident, (3) Less confident, (4) Not confident, (5) Very uncertain. There are 12 statements with a total score of 12-60, and data were collected using the BSES-SF questionnaire, validated for reliability (Campos et al., 2020). Data collection will involve distributing questionnaires to each breastfeeding mother respondent, accompanied during completion. Subsequently, the gathered data will be collected and analyzed.

Descriptive and bivariate analyses were performed using chi-square tests, followed by logistic regression for multivariate analysis. The results of the hypothesis testing will be compared with the Chi-Square table with the interpretation that if the value is $p < 0.05$, then H0 is rejected and Ha is accepted, meaning there is a relationship between the independent variable and the dependent variable with a confidence level of 95%. Furthermore, the researcher wants to determine which breastfeeding indicators are most closely related to the incidence of stunting in toddlers, so the researcher will then analyze using logistic regression.

To maintain the confidentiality of respondent data, the researcher has undertaken several research ethics measures, including having respondents sign an Informed Consent form, anonymizing respondent names, and keeping respondent data, such as respondent characteristics, confidential.

The study team strictly followed ethical standards in research, and the ethics approval documents are available under No. EC.0183/KEPK/STKBS/IX/2023 from the Health Research Ethics Commission (KEPK) STIKES Bani Saleh. We sought approval from each participant, and all individual information was kept strictly confidential.

Results

Characteristics of Respondents

The data was collected in September 2023 over the course of one month. Based on Table 1, the results of socio-demographic characteristics indicate that respondents were predominantly aged with the majority holding a bachelor's degree or above, and working in the private sector.

Table 1. The socio-demographic characteristic of participants (n: 85)

Characteristics		f	Percentage (%)
Age (years)	19-25	21	24.7
	26-30	33	38.8
	31-35	23	27.1
	36-40	5	5.8
	41 above	3	3.6
Education	Primary School	2	2.4
	Junior High School	10	11.8
	Senior High School	24	28.2
	Bachelor-level or above	49	57.6
Occupational	Housewife	10	11.8
	Health Care Worker	22	25.9
	Education Worker	4	4.7
	Government employees	21	24.7
	Private employees	28	32.9

In more detail, as shown in Figure 1, the majority of breastfeeding mothers were aged between 26-30 years (38.8%). The majority of mothers had a bachelor's degree or higher, comprising 49 respondents (57.6%). Regarding the occupation of the mothers, the majority were employed in the private sector, totaling 28 respondents (32.9%).

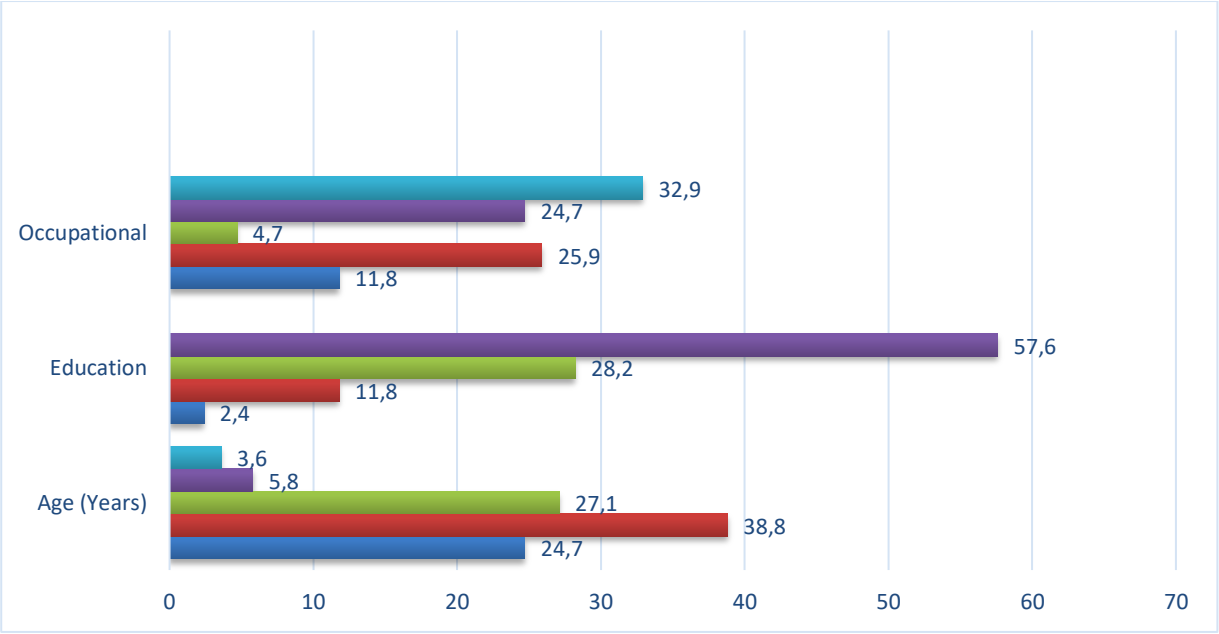

Figure 1. Characteristic Participant

1. Failure of Exclusive Breastfeeding

a. Mindset in Breastfeeding

Table 2. Distribution of Respondents for the Variable Mindset in Breastfeeding

No	Mindset in Breastfeeding	F	Percentage (%)
1	Positive	32	37.64
2	Negative	53	62.36
Total		85	100

Table 2 shows that out of 85 respondents, based on the mindset in breastfeeding, 32 respondents (37.64%) had a positive mindset, while 53 respondents (62.36%) had a negative mindset.

b. Emotional Reaction in Breastfeeding

Table 3. Distribution of Respondents for the Variable Emotional Reaction in Breastfeeding

No	Emotional Reaction in Breastfeeding	f	Percentage (%)
1	Difficulty	51	60
2	No Difficulty	34	40
Total		85	100

Table 3 shows that out of 85 respondents, based on the emotional reaction in breastfeeding, 51 respondents (60%) experienced difficulty, while 34 respondents (40%) did not face any difficulties.

c. Efforts for Successful Breastfeeding

Table 4. Distribution of Respondents for the Variable Efforts for Successful Breastfeeding

	Efforts for Successful Breastfeeding	f	Percentage (%)
1	Good	42	49.41
2	Enough	43	50.59
Total		85	100

Table 4 shows that out of 85 respondents, based on efforts for successful breastfeeding, 42 respondents (49.41%) made good efforts, while 43 respondents (50.59%) made enough efforts.

d. Breastfeeding Behavior

Table 5. Distribution of Respondents for the Variable Breastfeeding Behavior

No	Breastfeeding Behavior	F	Percentage (%)
1	Breastfeeding	60	70.59
2	No Breastfeeding	25	29.41
Total		85	100

Table 5 shows that out of 85 respondents, based on breastfeeding behavior, 60 respondents (70.59%) practiced breastfeeding, while 25 respondents (29.41%) did not breastfeed.

2. Incidence of Stunting

Table 6. Distribution of Respondents for the Variable Incidence of Stunting

No	Incidence of Stunting	F	Presentase (%)
1	Stunting	46	54.12
2	No Stunting	39	45.88
Total		85	100

Table 6 shows that out of 85 respondents, based on the incidence of stunting, 46 children (54.12%) were stunted, while 39 children (45.88%) were not stunted.

Table 7. Relationship between the Failure of Exclusive Breastfeeding and the Incidence of Stunting in Toddlers (n=85)

Failure of Exclusive Breastfeeding	Category	Incidence of Stunting				Chi square		
		Stunting		No Stunting		p value	PR	CI 95%
		f	%	f	%			
Mindset in Breastfeeding	Positive	17	53.2	15	46.8	0.041	1.991	1.08-3.05
	Negative	29	54.7	24	45.3			
Emotional Reaction in Breastfeeding	Difficulty	36	70.5	15	29.5	0.028	1.731	1.03-3.00
	No Difficulty	10	29.4	24	70.6			
Efforts for Successful Breastfeeding	Good	24	57.1	18	42.9	1.000	1.000	0.52-1.69
	Enough	22	51.2	21	48.8			
Breastfeeding Behavior	Breastfeeding	36	60.0	24	40.0	0.003	2.569	1.27-5.40
	No Breastfeeding	10	40.0	15	60.0			

Based on the above Table 7, the analysis of the variable failure of exclusive breastfeeding in relation to the efforts for successful breastfeeding indicator does not show a significant relationship with the incidence of stunting. However, a different pattern is observed in the failure of exclusive breastfeeding concerning the mindset in breastfeeding with a p-value of 0.041 (CI = 1.08-3.05), the emotional reaction in breastfeeding with a p-value of 0.028 (CI = 1.03-3.00), and the breastfeeding behavior indicator with a p-value of 0.003 (CI = 1.27-5.40), which indicates a significant relationship with the incidence of stunting in toddlers, supported by the moderately narrow Confidence Interval (CI).

After conducting bivariate analysis for each indicator of the variable failure of exclusive breastfeeding, it was found that the mindset in breastfeeding, emotional reaction in breastfeeding, and breastfeeding behavior indicators had a value of $p < 0.25$, thereby meeting the criteria for multivariate analysis. To determine which of these indicators has the most significant influence (dominant) on the incidence of stunting in toddlers, logistic regression analysis was employed, with $\alpha < 0.05$.

Table 8. Strength of the relationship of the indicators of the failure of exclusive breastfeeding with the incidence of stunting in toddlers

The failure of exclusive breastfeeding	Category	B	*p-value*	Exp(B)
Mindset in Breastfeeding	Positive	0.889	0.044	0.977
	Negative			
Emotional Reaction in Breastfeeding	Difficulty	0.743	0.030	1.650
	No Difficulty			
Breastfeeding Behavior	Breastfeeding	0.690	0.005	1.974
	No Breastfeeding			

Based on Table 8, the p-value significance of the failure of exclusive breastfeeding variable is 0.044 < 0.05 for the mindset in breastfeeding indicator, 0.030 < 0.05 for the emotional reaction in breastfeeding indicator, and 0.005 < 0.05 for the breastfeeding behavior indicator. Therefore, it can be concluded that there is a significant influence of the failure of exclusive breastfeeding on the incidence of stunting in toddlers, with the coefficient of influence for the mindset in breastfeeding indicator being 0.889, the emotional reaction in breastfeeding indicator being 0.743, and the breastfeeding behavior indicator being 0.690.

Discussions

Breast Breast milk is the first, primary, and best food for infants, naturally produced by the mother's breast glands through the process of breastfeeding. Breast milk is a nutritious substance containing a lipid emulsion in a protein solution, lactose, and organic salts secreted by the mother's breast glands (Prentice et al., 2013). It serves as the primary source of nutrition for infants, thus being vital for their health, growth, and development. Stunting is a condition in which a child experiences growth impairment, leading to a mismatch between the child's height and age, as a consequence of chronic nutritional problems stemming from prolonged inadequate nutrient intake. To determine the status of whether a toddler is stunted or not, the anthropometric index used refers to the length-for-age/height-for-age index (LA/A or HA/A) (Kemenkes RI, 2021).

Breastfeeding mothers assess their abilities based on other emotional and physiological conditions experienced during the act. Positive interpretations, such as joy or satisfaction, enhance self-efficacy, while negative interpretations of pain, fatigue, anxiety, or stress can diminish maternal self-efficacy. This has been proven to affect the level of self-efficacy and the breastfeeding process. Breastfeeding has been found to be heavily reliant on self-confidence, whereas breastfeeding failure is associated with emotional and physiological disturbances that affect the let-down reflex (Ibrahim et al., 2022). Situations involving anxiety, stress, and pain can hinder oxytocin hormone release and may result in poor let-down reflex and inadequate milk syndrome (Purnamasari et al., 2020). Negative emotional states can also trigger lactation crises, where there is a sudden decrease in the amount of breast milk produced; the crisis subsides when the emotional pressure is alleviated. A mother's belief in breastfeeding her child may decline if she is tired, in pain, or anxious, but this does not pose a barrier to breastfeeding for mothers with high levels of self-efficacy (Bergerat et al., 2021). Based on the research results, it was found that the failure of exclusive breastfeeding variable, which includes the indicators of mindset in breastfeeding, emotional reaction in breastfeeding, and breastfeeding behavior, has a significant influence on the incidence of stunting in toddlers, as these variables have a significance level of < α (0.05). It is known from the test results that the independent variable, the failure of exclusive breastfeeding, found that most respondents had a positive mindset, with 32 respondents (37.64%) and 53 respondents (62.36%) having a negative mindset, experiencing difficulty in breastfeeding with 51 respondents (60%) and not having difficulty in breastfeeding with 40 respondents (40%), and engaging in breastfeeding behavior with 55 respondents (64.71%) and not engaging with 30 respondents (35.29%). It is evident that all these indicators are indicative of a mother who experiences a failure in providing exclusive breastfeeding. Meanwhile, exclusive breastfeeding has numerous benefits as breast milk contains complete nutrition, boosts the immune

system, enhances stable mental and emotional intelligence as well as mature spirituality, accompanied by good social development, easy digestion and absorption, a composition of fats, carbohydrates, calories, proteins, and vitamins, and protection against infectious diseases, thus being one of the contributing factors to the occurrence of stunting in toddlers.

The results of this study show that stunted toddlers are more common among those who do not receive exclusive breastfeeding compared to those who do. Our findings align with previous studies indicating a strong link between exclusive breastfeeding and reduced stunting. Through observations and interviews during the research, it was found that newborns were given formula milk prematurely because the mother's breast milk did not come out. Additionally, due to the minimal breast milk produced, it was supplemented with formula milk. This was due to the mother's inadequate consumption of highly nutritious food during pregnancy, which can stimulate the production of breast milk. Moreover, some mothers do not breastfeed their babies due to sore and injured nipples caused by incorrect breastfeeding and other factors (Li et al., 2020).

Other studies state that mothers who have direct breastfeeding experience tend to be more confident in continuing to breastfeed their babies. Breastfeeding experience will have different impacts on self-confidence, depending on the process of achievement. Successes often achieved will enhance a mother's self-empowerment, while failures experienced can lower one's perception of their abilities. Breastfeeding experience can increase a mother's confidence, leading to a strong desire to breastfeed her baby. If a mother is confident and successful in breastfeeding, it will increase the level of self-efficacy in breastfeeding, whereas if a mother's confidence is low, the success rate of breastfeeding will also be low (Ibrahim et al., 2022). These results emphasize the need for enhanced breastfeeding support and education to reduce stunting rates.

Conclusion

This study presents data on the relationship between the failure of exclusive breastfeeding and the incidence of stunting in toddlers, indicating that the indicators of mindset in breastfeeding, emotional reaction in breastfeeding, and breastfeeding behavior have a significant influence on the incidence of stunting in toddlers. These indicators of the failure of exclusive breastfeeding have been proven through the activities of breastfeeding mothers who do not provide exclusive breastfeeding to their children until they reach 6 months of age. The provision of exclusive breastfeeding is highly recommended to prevent stunting in toddlers, with further consideration of other factors that may affect the occurrence of stunting, thereby reducing the incidence of stunting.

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