

THE RELATIONSHIP BETWEEN EXCLUSIVE BREASTFEEDING AND STUNTING INCIDENCE IN TODDLERS AGED 24-60 MONTHS AT THE PANOMBEAN PANEI HEALTH CENTER

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ABSTRACT

Indonesia as a developing country has many health problems, one of these problems is stunting. According to WHO, stunting is a condition where a child's z-score is less than -2 SD/standard deviation as measured on the WHO growth curve. Many factors cause toddlers to experience stunting, such as poor nutritional status during the mother's pregnancy, parenting patterns, and exclusive breastfeeding. Exclusive breastfeeding is the initial food for babies because it contains essential nutrients for immunity so that babies do not get infected easily. In North Sumatra, the stunting incidence rate is 21.1%, especially in Simalungun Regency, the stunting incidence rate is 17.4%. Seeing the conditions that occurred, interest arose in conducting research in the Simalungun Regency area, specifically in the Panombean Panei area. This research uses observational analytical methods with a cross sectional study research design. The sampling technique used in this research was total sampling with a total of 50 toddlers who met the criteria. The assessment of exclusive breastfeeding was carried out by completing a questionnaire by mothers of toddlers. The statistical test used is Chi-Square. The research results showed that 29 (58%) toddlers were given breast milk non-exclusively, so there were 21 (42%) stunted toddlers and 8 (16%) normal toddlers. There are 21 (42%) toddlers who receive exclusive breast milk, of which 9 (18%) toddlers are stunted and 12 (24%) toddlers are normal. The results of the analysis show a p-value = 0.035, which means there is a relationship between exclusive breastfeeding and the incidence of stunting. The conclusion of this research is that there is a relationship between exclusive breastfeeding and the incidence of stunting in toddlers aged 24-60 months at the Panombean Panei Health Center.

Keywords: Exclusive breastfeeding, Stunting, Nutritional status

Introduction

Indonesia as a developing country has many health problems, one of which is stunting. Indonesia is among the countries that have the three most common nutritional problems out of 117 countries around the world. Nutritional problems that occur in toddlers are: stunting, wasting, and overweight (Lestari et al., 2018).

Stunting is a chronic nutritional problem because nutritional intake is not met according to nutritional needs for a long time. The beginning of stunting occurs when the child is still in

the womb and will appear when the child is two years old (SJMJ et al., 2020). According to WHO, stunting is a condition in which a child's z-score is less than -2 SD/standard deviation measured on the WHO growth curve (Novayanti et al., 2021).

Many factors cause toddlers to experience stunting, such as poor nutritional status in maternal pregnancy, parenting, and exclusive breastfeeding (Sari, 2022). Exclusive breastfeeding is the initial food for newborns up to 6 months of age because it contains essential nutrients for the growth and development of the baby and as an immune substance so that the baby is not easily infected (Komalasari et al., 2020).

In accordance with the 2022 Indonesian Nutrition Status Survey (SSGI), there was a decrease in stunting incidence by 21.6%, although the government is trying very hard to further reduce this incidence rate so that in accordance with the target in 2024 it is only around 14%. In North Sumatra, the stunting incidence rate is 21.1%, especially in Simalungun Regency, the stunting incidence rate is 17.4% (Policy et al., n.d.).

Breast milk provides many benefits, in addition to ideal nutritional value, breast milk can also increase immunity, increase children's intelligence, make children have an ideal weight, prevent sudden infant death syndrome (SIDS), and strengthen the inner bond between mothers and babies (Wijaya, 2019).

Seeing the conditions that occurred, there was an interest in conducting research in the Simalungun Regency area, precisely in the Panombean Panei area. To prove whether there is a relationship between exclusive breastfeeding and stunting in toddlers aged 24-60 months in the Panombean Panei area, the following research was conducted.

Research Methods

This study uses an observational analytical method, which is a study that looks for a relationship between two or more variables but the researcher only observes without intervention or treatment of the subject to be studied (Concato et al., 2017). The design used in the study is a cross sectional study research design, which is to look for the relationship between the independent variable (risk factor) and the dependent variable (cause-effect/effect) with a measurement at one time. The sampling technique used in this study is a purposive sampling technique by providing an assessment of the criteria that have been determined in the research topic (Mustafidah & Suwarsito, 2020).

The research population is the sum of all research subjects which can be people, groups, organizations, events, times, cases, or places with the same thing (Irmawartini & Nurhaedah, 2017). In the study, the population was all toddlers aged 24-60 months who were brought by their parents to the Panombean Panei Health Center for examination.

The research sample is part of the population that is the source of research information. It consists of two criteria, namely the inclusion criteria and the exclusion criteria.

The sample size in this study was taken using the total sampling method. All toddlers aged 24-60 months who were brought by their parents to the Panombean Panei Health Center for examination on July 15-16, 2024 so that a total of 50 children were sampled.

Data collection was carried out after obtaining permission for a preliminary survey from the academic field of the Faculty of Medicine, the S1 Medical Education study program of Prima

Indonesia University which was then submitted to the Panomebean Panei Health Office, the Head of Panombean Panei Sub-district, and the Head of the Panomebean Panei Health Center. After obtaining permission, secondary data that previously existed was collected. To obtain primary data, an approach was carried out on respondents to fill out questionnaires, followed by measuring children's height according to age using the z-score table.

The data variables that have been collected by the questionnaire and observation methods will be processed in several stages: editing, coding, processing, cleaning, and tabulating.

1. Editing

Editing is the stage of checking the completeness and examining the results of the data that has been collected. The goal of this stage is to eliminate field recording errors and correct them using statistical methods to simplify the process of coding and managing data.

2. Coding

Coding is the stage of giving a code from the results of the answers given by the respondents, then classified into categories by providing scores or symbols to facilitate data processing.

3. Processing

Processing is the stage to obtain data based on several groups of raw data using formulas so as to obtain the required information results.

4. Cleaning

Cleaning is the stage of re-checking the data that has been provided whether there are errors or not.

5. Tabulating

Tabulating is the stage of grouping data according to the purpose of the research, which will be compiled in the form of tables.

Results and Discussion

1. Characteristics of Respondents in the Study

Table 1 Distribution of Respondent Characteristics Based on Gender of Toddlers Aged 24-60 Months at Panombean Panei Health Center

Gender	Frequency	Percentage (%)
Man	32	64
Woman	18	36
Total	50	100

Based on table 1 of information regarding the distribution of respondent characteristics by gender, there were 50 toddlers who were the subjects in this study, as many as 32 toddlers were male (64%) and 18 toddlers were female (36%).

It can be concluded that in this study the proportion of male toddlers is more than female toddlers.

Table 2 Distribution of Toddlers 24-60 Months at Panombean Panei Health Center

Age	Frequency	Percentage (%)
24-36	19	38
37-48	7	14
49-60	24	48
Total	50	100

Based on table 2, information about the age distribution of toddlers of 24-60 months at the Panombean Panei Health Center shows that of the 50 toddlers examined, most of the toddlers are in the age group of 49-60 months, namely 24 toddlers (48%). Meanwhile, the group of toddlers aged 24-36 months has 19 toddlers (38%), and the age group of 37-48 months has the least proportion, which is only 7 toddlers (14%).

Table 3 Distribution of TB/U Nutritional Status in Toddlers Aged 24-60 Months at Panombean Panei Health Center

Status Gizi TB/U	Frequency	Percentage (%)
Very Short	6	12
Short	24	48
Normal	20	40
Total	50	100

Based on table 3, information about the distribution of TB/U nutritional status in toddlers aged 24-60 months at the Panombean Panei Health Center of 50 toddlers examined, most of the results had a short z-score (-3 SD to -2 SD) as many as 24 toddlers (48%). Meanwhile, 20 toddlers (40%) with normal z-score results (-2 SD to +2 SD) and only 6 toddlers (12%) with very short z-score results (<-3 SD).

Table 4 Distribution of BB/U Nutritional Status to Toddlers Aged 24-60 Months at Panombean Panei Health Center

Status Gizi BB/U	Frequency	Percentage (%)
Malnutrition	3	6
Undernutrition	10	20
Good Nutrition	37	74
Total	50	100

Based on table 4 of information regarding the distribution of BB/U nutritional status in toddlers aged 24-60 months at the Panombean Panei Health Center from 50 toddlers examined, there were results with good nutrition for 37 toddlers (74%). Meanwhile, with malnourished results there were 10 toddlers (20%), and with malnourished results there were 3 toddlers (6%).

Table 5 Distribution of Exclusive Breastfeeding Status to Toddlers Aged 24-60 Months at Panombean Panei Health Center

Breastfeeding Status	Frequency	Percentage(%)
Non Exclusive	29	58
Exclusive	21	42
Total	50	100

Based on table 5 of information regarding the distribution of exclusive breastfeeding status in toddlers aged 24-60 months at the Panombean Panei Health Center from 50 toddlers examined, there were results that children who were given non-exclusive breastfeeding had a higher incidence rate, namely 29 toddlers (58%) and children who were exclusively breastfed were 21 toddlers (42%).

Table 6 Distribution of Mother's Last Education History at Panombean Panei Health Center

Mother's Last Education History	Frequency	Percentage (%)
Low	11	22
Intermediate	34	68
Tall	5	10
Total	50	100

Based on table 6 of information regarding the distribution of mothers' last education history at the Panombean Panei Health Center from 50 respondents interviewed, there were results that there were 11 mothers who had a history of low education (22%), 34 mothers who had a history of secondary education (68%), and 5 mothers who had a history of higher education (10%).

Table 7 Distribution of Stunting Incidents Experienced by Toddlers Aged 24-60 Months at the Panombean Panei Health Center

Stunting Incidence	Frequency	Percentage (%)
Stunting	30	60
Normal	20	40
Total	50	100

Based on table 7 of information regarding the distribution of stunting events experienced by toddlers aged 24-60 months at the Panombean Panei Health Center from 50 toddlers examined, there were 30 toddlers (60%) who were stunted and 20 toddlers (40%) who were normal.

2. Bivariate Analysis

The comparison of exclusive breastfeeding with the incidence of stunting is presented in the table, as follows:

Table 8 The Relationship between Exclusive Breastfeeding and the Incidence of Stunting in Toddlers Aged 24-60 Months at the Panombean Panei Health Center

		Z-score TB/U		Total	p-value
		Stunting	Normal		
Breastfeeding	Non Exclusive	21 (42%)	8 (16%)	29 (58%)	0.035
	Exclusive	9 (18%)	12 (24%)	21 (42%)	
Total		30 (60%)	20 (40%)	50 (100%)	

Based on table 8, it shows that of the 50 toddlers examined, it is known that 29 (58%) toddlers are given breast milk non-exclusively, so that there are 21 (42%) stunted toddlers and 8 (16%) normal toddlers.

Toddlers who receive exclusive breast milk amounted to 21 (42%) toddlers, of which 9 (18%) toddlers were *stunted* and 12 (24%) were normal toddlers.

The relationship between exclusive breastfeeding and stunting incidence in toddlers aged 24-60 months at the Panombean Panei Health Center was obtained *with a p-value* = 0.035 with a significance rate of 5% ($0.035 < 0.05$). Therefore, an alternative hypothesis (H_a) is acceptable, namely that there is a relationship between exclusive breastfeeding and the incidence of stunting in toddlers aged 24-60 months at the Panombean Panei Health Center.

Table 9 The Relationship between the History of the Mother's Last Education Level and Exclusive Breastfeeding for Toddlers Aged 24-60 Months at the Panombean Panei Health Center

		Breastfeeding		Total	p-value
		Non-Exclusive	Exclusive		
Mother's Education	LastLow	7 (14%)	4 (8%)	11 (22%)	0.192
	Intermediate	21 (42%)	13 (26%)	34 (68%)	
	Tall	1 (2%)	4 (8%)	5 (10%)	
Total		29 (58%)	21 (42%)	50 (100%)	

Based on table 9, it shows that of the 50 respondents interviewed, there are three categories of mothers' last educational history. With primary education backgrounds amounting to 11 mothers, secondary education backgrounds amounting to 34 mothers, and with higher education backgrounds amounting to 5 mothers. So that there are 29 toddlers who are given breast milk non-exclusively and 21 toddlers who are given exclusively.

The relationship between the history of the mother's last education level and exclusive breastfeeding of toddlers aged 24-60 months at the Panombean Panei Health Center was obtained with a *p-value* = 0.192 with a significance rate of 5% ($0.192 > 0.05$). Therefore, the results showed that there was no significant relationship between the history of the mother's last education level and the exclusive breastfeeding of toddlers aged 24-60 months at the Panombean Panei Health Center.

DISCUSSION

Stunting is a condition in which the height of toddlers is shorter than the normal height of

toddlers according to their age, so that the z-score value of children <-2 elementary school. In this study, more proportion of male toddlers (64%) were examined compared to female toddlers (36%), so it was also found that toddlers with male sex had a higher incidence rate. This is in line with the research of Novayanti et al., which was conducted at the Banjar I Health Center, Banjar City, West Java. Malnutrition is more common in men in the first year of life, because their bodies are larger and require a lot of nutrients (Novayanti et al., 2021). More energy and protein are needed by men than women, therefore men are better able to do heavy work that women cannot do (Aprilia, 2022). If nutritional intake is not sufficient for a long period of time, the risk of growth failure will occur. Boys' growth is more influenced by psychological and environmental pressures than girls' (Novayanti et al., 2021).

The age of toddlers in this study was categorized into 3 parts, namely 24-36 months (38%), 37-48 months (14%), and 49-60 months (48%). Based on the age of toddlers in this study, stunting cases mostly occurred at the age of 49-60 months (48%). The incidence of stunting tends to increase as children age. This shows that the older the age, the more visible the risk of stunting incidence (Mutunga et al., 2021).

The incidence of stunting is closely related to the nutritional status of toddlers. This nutritional status is the implementation of the state of toddlers in everything they consume. When nutritional intake is not met according to nutritional needs for a long time, it can have a bad impact on children's growth and development, especially causing stunting. In the research of (Wardita et al., 2021) explained that there are several factors that significantly affect the incidence of stunting, one of which is exclusive breastfeeding (Wardita et al., 2021).

The status of breastfeeding in this study is divided into 2 parts, namely, exclusive breastfeeding and non-exclusive breastfeeding. Exclusive breastfeeding is regulated in Government Regulation of the Republic of Indonesia Number 33 of 2012 concerning exclusive breastfeeding which explains that every mother who gives birth to a child is obliged to give exclusive breastfeeding for the first 6 months without adding and/or replacing other foods or drinks (SJMJ et al., 2020).

In the study of (Lestari et al., 2018), the results of the relationship between exclusive breastfeeding and the incidence of stunting in toddlers aged 24-60 months at the Sangkrah Health Center, Surakarta, Central Java with a p-value = $0.034 < 0.05$ (Lestari et al., 2018). This research is also in line with the observational research conducted by (SJMJ et al., 2020) in Buntu Malang District, Mamasa Regency based on the results of the Chi-Square test, the results of the p-value $0.000 < 0.05$ which means that in the study there is a relationship between exclusive breastfeeding and the incidence of stunting in toddlers (SJMJ et al., 2020).

In this study, there were 29 toddlers (58%) who did not get breast milk exclusively and 21 toddlers (42%) of them experienced stunting. Meanwhile, there were 9 toddlers (18%) who received exclusive breastfeeding who were stunted. This happens because there are many factors for stunting that have not been studied and can be a risk factor for stunting. According to research by (Novayanti et al., 2021), exclusive breastfeeding has nothing to do with the incidence of stunting, family income factors and maternal education, low birth weight, and energy intake have an important role in stunting incidence (Novayanti et al., 2021). The research of Firna & Setiarini (2023), in a literature review stated that there are several other risk factors

related to the incidence of stunting, namely the child's weight at birth, parental education, the age of the toddler, the level of family income, infectious diseases suffered by the child, gender, maternal Body Mass Index (BMI), pregnancy distance, vaccination, breastfeeding, attenuation services, environmental sanitation, and others (Firna, E., 2023).

In this study, it was stated that there was a relationship between exclusive breastfeeding and stunting at the age of 24-60 months at the Panombean Panei Health Center with a p-value of $0.035 < 0.05$. Toddlers who are given non-exclusive breastfeeding will experience growth retardation and increase the incidence of stunting, which is characterized by a slowdown in the size of the child's height. In addition to preventing stunting, exclusive breastfeeding can also reduce mortality and increase immunity. Therefore, mothers are expected to know and understand the importance of breastfeeding and what the ingredients in it are, so that they can reduce the incidence of stunting in Indonesia, especially the Panombean Panei area.

However, in this study, the relationship between the history of the mother's final education level and exclusive breastfeeding did not have a significant relationship with the results of p-value $0.192 > 0.05$. This means that in this study, the level of education of mothers does not directly affect whether mothers can provide exclusive breastfeeding. This can be caused by several factors, first, formal education is not the only source of information that influences breastfeeding behavior. Many mothers with low educational backgrounds, but have access to health information through counseling provided by local health services. A study by (North et al., 2022) states that community interventions and support from health professionals are often more effective in promoting exclusive breastfeeding than relying solely on the mother's formal education level (North et al., 2022).

Stunting is a condition caused by many factors, such as economic status, access to health services in the area, diet, and also environmental sanitation. In the study of (Black et al., 2020) stated that maternal education plays a role in children's health, but other variables such as economic status and access to health services affect the results of stunting incidence rates (Black et al., 2020).

The limitation of this study is that exclusive breastfeeding is the only independent variable. This study is retrospective, namely examining the history of exclusive breastfeeding, so that the memory of the respondents (mothers) greatly affects the quality of the data provided.

Conclusion

Based on the results obtained in this study, it can be concluded that there is a relationship between exclusive breastfeeding and stunting incidence in toddlers aged 24-60 months at the Panomebean Panei Health Center. The number of toddlers aged 24-60 months at the Panombean Panei Health Center who are stunted is 30 toddlers (60%). The number of exclusive breastfeeding for toddlers 24-60 months at the Panombean Panei Health Center was 21 toddlers (42%). Exclusive breastfeeding has an important role in preventing stunting events, maintaining children's immunity, reducing mortality rates, and can increase children's intelligence. The history of the mother's last level of education has no significant relationship with exclusive breastfeeding.

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