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Parental feeding practices and stunting status among preschool children

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Abstract

Background: Stunting is a condition of growth failure in children caused by chronic malnutrition, characterized by a height-for-age (HFA) score below -2 SD according to WHO standards. An inappropriate diet is one of the factors that can influence the incidence of stunting in preschool-aged children. Stunting is not just a short-term health problem but also disrupts brain development, intelligence, immunity, and increases the risk of chronic diseases in adulthood. Children who are stunted experience limitations in learning, motor skills, and socio-emotional development, which lowers the quality of human resources. Therefore, stunting is a serious public health problem that requires immediate intervention.

Purpose: To examine parental feeding practices and stunting status among preschool children.

Method: This study employed a quantitative method with a cross-sectional design. The study sample consisted of 36 respondents selected using total sampling. Dietary data were collected using the Child Feeding Questionnaire (CFQ), while the prevalence of stunting was measured by height using a microtoise and calculated based on the height-for-age (HAZ) indicator according to WHO standards. Data analysis was performed using univariate and bivariate methods, employing Fisher's Exact test with a significance level of $\alpha = 0.05$

Results: The results of the Fisher's Exact test show a p-value > 0.05 . Based on the results of research conducted, it can be concluded that the eating patterns of preschool children are entirely in the appropriate category (100%), the incidence of stunting mostly does not occur, with 96.7% of children not stunted and only 3.3% experiencing stunting, and there is no relationship between eating patterns and the incidence of stunting in preschool children at both kindergartens (p value = 0.942).

Conclusion: These findings suggest that adopting a dietary pattern that considers the type, quantity, and frequency of food is a crucial aspect in supporting the growth and development of preschool-aged children. A balanced and regular diet plays a role in meeting children's nutritional needs, although stunting can still be influenced by other long-term, multifactorial factors.

Suggestion: It is recommended for parents and the school to continue maintaining the child's good eating habits and to increase periodic monitoring of nutritional status so that the risk of stunting can be prevented as early as possible.

Keywords: Eating Patterns; Preschool Children; Stunting.

INTRODUCTION

In Indonesia, the prevalence of stunting decreased from 24.4% in 2021 to 21.6% in 2022, but this figure remains above the WHO-recognized public health average (Rafi, 2024). In the Yogyakarta Capital Region Province, the prevalence of stunting increased from 16.4% in 2022 to 18.0% in 2023,

according to the 2023 Indonesian Health Survey (Ministry of Health of the Republic of Indonesia, 2023).

Preschoolers, aged 3–5, are in a period of rapid growth and development (Harlistyarintica & Fauziah, 2020). During this phase, children begin to develop

their own food preferences, so the resulting eating habits will influence their nutritional status and growth. Inappropriate dietary patterns in terms of type, quantity, and frequency can lead to an imbalance in nutrient intake, which can stunt growth (Haryani, 2024). Chronic malnutrition in early life is a major cause of stunting (Budiarti, Suliyawati, & Nuria, 2022).

Several studies have shown a link between dietary patterns and stunting. Previous research showed a significant association between animal protein consumption and stunting ($p=0.001$). However, other research suggests that this relationship may be influenced by other factors such as parenting patterns, recurrent infections, and environmental sanitation (Saputri, Abdullah, Akhriani, & Marthalena, 2025).

RESEARCH METHOD

This study used a quantitative method with a cross-sectional design. The study was conducted at ABA Ambarbinangun Kindergarten and ABA Godegan Kindergarten in January–February 2026. The study population consisted of 36 children aged 3–5 years and their parents. The sampling technique

used total sampling, meaning the entire population was used as the sample.

The independent variable in this study was the preschool children's eating habits, while the dependent variable was the incidence of stunting. Dietary habits were measured using the Child Feeding Questionnaire (CFQ), which consists of 15 items on a Likert scale. This instrument has been tested for validity and reliability, with a Cronbach's Alpha value of >0.61 , thus being deemed reliable. Scores were then categorized into appropriate ($\geq 55\%$) and inappropriate ($< 55\%$).

Stunting was measured by measuring height using a microtoise with an accuracy of 0.1 cm. The z-score for height/age was calculated based on World Health Organization standards. Children were categorized as stunted if the z-score was < -2 SD and not stunted if it was ≥ -2 SD. Univariate data analysis was performed to describe the frequency distribution and percentage of each variable. Bivariate analysis used the Fisher's Exact test with a significance level of $\alpha = 0.05$ to determine the relationship between dietary patterns and stunting incidence.

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RESEARCH RESULTS

Table Characteristics of Respondent (N=36)

Variable	Results	P-Value
Parents' Age (Mean±SD) (Range)	(35.06±5.32) (20-55)	
20-29	3/8.3	
30-39	29/80.5	
40-49	3/8.3	
>50	1/2.8	
Education Level (n/%)		
Junior High School	1/2.8	
Senior High School	27/75.0	
Bachelor's Degree	8/22.2	
Employment Status (n/%)		
Homemaker	24/66.6	
Private Employee	2/5.5	
Civil Servant	1/2.8	
Other	9/25.0	
Child's Age (Mean±SD) (Range)	(4.31±0.40) (3-5)	
3-4	7/19.4	
4-5	29/80.0	
Gender (n/%)		
Male	22/61.0	
Female	14/39.0	
Dietary Habit (n/%)		
Proper Diet	36/100	
Inappropriate	0/0	
Stunting (n/%)		0.942
Yes	1/3.3	
No	35/96.7	

The table above shows that the average age of parents and standard deviation is (35.06 ± 5.32) with an age range (20-55) and the average age of children is (4.31 ± 0.40) with an age range (3-5). Based on education level, the majority of parents have a senior high school education level, namely 27 (75.0%), the majority of housewives with 24 respondents (66.6%) and the majority of children are male, 22 (61.0%). Based on dietary patterns, all respondents have a proper diet, namely 36 (100%), and the majority of

respondents are not stunted, 35 (97.0%). The results of statistical tests show a p-value = 0.942 ($p > 0.05$), which means there is no significant relationship between dietary patterns and the incidence of stunting in preschool children. A very low correlation value also indicates that the strength of the relationship between variables is very weak.

Based on the results of the crosstab analysis and statistical tests, a significance value of $p > 0.05$ was obtained, indicating that there is no statistically

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significant relationship between the variables studied. However, when viewed from the methodological aspect of the study, the possibility of a relationship between the variables still exists. This can be influenced by several factors, such as limited sample size, uneven data distribution, failure to meet statistical test assumptions, and the presence of other confounding factors not measured in the study. Therefore, although no relationship was found statistically, theoretically and empirically, a relationship between the variables still exists and needs to be further studied through research with a better design, sample size, and variable control.

DISCUSSION

Research on dietary patterns indicates that most preschool children have a relatively appropriate diet. This finding suggests that implementing a diet that considers the type, quantity, and frequency of meals is a crucial aspect in supporting the growth and development of preschool-aged children. A balanced and regular diet plays a role in meeting children's nutritional needs, although stunting can still be influenced by other long-term and multifactorial factors.

Dietary patterns in preschool children are a crucial factor in the growth and development process. A good diet is characterized by providing a varied, balanced diet that meets children's nutritional needs, both in terms of type, quantity, and frequency of meals. Adequate macro and micronutrient intake allows children to obtain sufficient energy and nutrients to support optimal growth and physical development (Hastuti, 2021). A regular diet also helps maintain children's immune systems, thereby preventing infectious diseases that can potentially inhibit growth.

Regarding the characteristics of the parents in this study, most were aged 30–39 (80.6%), had a high school education (75.0%), and were mostly housewives (66.6%). Middle adulthood and a secondary or higher education level mean parents have sufficient knowledge regarding their children's nutritional needs. Maternal education is an important determinant of child feeding practices. Mothers with higher education tend to have better knowledge about food variety and the importance of animal protein. The differences in the results of this study compared to previous studies may be influenced by various factors, such as differences in respondent

characteristics, maternal education level, family socioeconomic conditions, and differences in the context and location of the study (UNICEF, 2020).

The results of the study on stunting incidence in preschool children showed that 35 respondents (97.2%) were not stunted and 1 respondent (2.8%) was stunted. Stunting is a chronic malnutrition problem caused by insufficient nutritional intake over a long period of time, resulting in growth disorders in children, namely a child's height is lower or shorter (dwarfism) compared to the height according to the standard for their age (Ministry of Health of the Republic of Indonesia, 2018). One factor that can influence stunting is poor eating habits which will affect nutrient intake, especially the intake of nutrients that play a role in child growth. Poor feeding patterns influence the incidence of stunting (Hakim, Yuningsih, & Fani, 2025).

Stunting can cause delays in brain development and motor skills in children (Akbar, Kartika, & Khairunnisa, 2023). Children who experience stunting tend to have lower cognitive abilities than non-stunted children, including in language, problem-solving, memory, and fine and gross motor skills. Furthermore, stunted children are also at risk of lower academic achievement and delayed cognitive development due to the effects of chronic malnutrition on the brain from an early age (Ningsih, Sutinbuk, & Asmaruddin, 2025).

The primary prevention strategy focuses on interventions during the First 1,000 Days of Life, including supplementary feeding for pregnant women and toddlers, iron tablets, exclusive breastfeeding for six months, complete immunizations, and vitamin A supplementation (Lestari, 2025). This strategy also involves collaboration between ministries/agencies, regional governments, and villages, through national simultaneous measurement and intervention for name-by-address data collection. A high-risk family-based approach targets parenting, sanitation, and access to clean water, with 10 definitive steps, such as maternal education and active integrated health posts (Posyandu).

Based on the explanation, stunting in preschool children is caused by a prolonged lack of nutritional requirements due to inappropriate feeding patterns, resulting in children being short for their age. If left untreated and untreated, stunting can have fatal consequences for productivity, as growth is stunted.

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The bivariate analysis conducted to determine the relationship between dietary patterns and stunting in preschool children yielded the results of the Fisher's Exact correlation test, as presented in the table. The statistical test results indicated that the analyzed data did not meet the assumptions of parametric tests, therefore, the Pearson correlation test could not be used to analyze the relationship between dietary patterns and stunting. Therefore, the analysis of the relationship between the two variables was continued using the Fisher's Exact test as an appropriate alternative statistical test.

The cross-tabulation of dietary patterns and stunting incidence revealed that all 36 children (100%) had an appropriate diet. Of these, 35 children (97.2%) were not stunted, and 1 child (2.8%) was stunted. Meanwhile, there were no respondents with an inappropriate diet, so the entire data distribution fell within the appropriate diet category.

The statistical test results showed a p-value of 0.945 ($p > 0.05$), indicating no significant relationship between dietary patterns and stunting in preschool children. A very low correlation also indicates a very weak relationship between the variables.

Stunting is a condition in which a child does not grow adequately due to a lack of nutrition over a long period of time, from pregnancy through early childhood. This condition generally becomes apparent when a child is around two years old, although the process begins early in life (Nur, 2025). Children who experience stunting not only grow shorter for their age but can also experience problems with cognitive development, weakened immune systems, and reduced work ability as adults. Therefore, meeting adequate nutritional needs, maintaining a balanced diet, and preventing recurrent infections during a child's first 1,000 days of life are crucial for preventing stunting (Selpiani, Astiti, & Erawati, 2025).

This study aligns with a previous study entitled "The Relationship between Dietary Patterns and the Incidence of Stunting in Children Aged 6–24 Months in the Work Area of the West Denpasar Community Health Center I." The results showed that most respondents had adopted appropriate dietary patterns and the majority of children did not experience stunting. The statistical test obtained a p-value of 0.807 (>0.05), indicating no significant relationship between dietary patterns and stunting.

These findings support the results of this study, which also showed no significant relationship between dietary patterns and stunting in children. This indicates that stunting is not solely influenced by dietary patterns but can also be influenced by other factors such as health conditions, history of infection, maternal nutritional status, and long-term environmental and socioeconomic factors within the family (Ningrum, Rismawan, & Sriasih, 2024).

This study disagrees with another study entitled "Feeding Patterns Associated with the Incidence of Stunting in Toddlers Aged 12–59 Months in the Tamalanrea Community Health Center Area in Makassar." The results of this study indicate a significant relationship between feeding patterns and stunting, with a p-value <0.05 . Therefore, it can be concluded that dietary patterns influence stunting in children aged 12–59 months. Children with inappropriate dietary patterns are at greater risk of stunting than children with healthy eating patterns (Wirawanti, Nadimin, Sirajuddin, Dewi, & Marwati, 2024).

However, the results of this study showed that the statistical test obtained a p-value >0.05 , indicating no significant relationship between dietary patterns and stunting in preschool children. This difference in results may be due to variations in respondent characteristics, differences in children's age ranges, sample size, and other factors not controlled for in the study, such as history of infectious diseases, nutritional status, parenting patterns, maternal behavior, meal frequency, environmental factors, and health services. This indicates that stunting is a multifactorial condition influenced not only by current dietary patterns but also by long-term, chronic factors.

CONCLUSION

The association between parental feeding practices and stunting status could not be statistically evaluated because all participants were classified as having appropriate feeding practices.

SUGGESTION

Parents and schools are advised to maintain their children's healthy dietary patterns and increase regular monitoring of their nutritional status to prevent the risk of stunting as early as possible.

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