

Relationship Between Parenting Style and Food Consumption Patterns and the Incidence of Stunting in Toddlers Aged 24–60 Months in the X Community Health Center Area

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ABSTRACT

Stunting is a condition in which a child under five years old has a height-for-age z-score below -2 standard deviations (classified as stunted) or below -3 standard deviations (classified as severely stunted). In Lelak District, efforts to accelerate stunting prevention have been initiated through monitoring and analysis at the village level. However, key indicators such as parenting practices and community dietary habits still require targeted interventions and additional support. This study aims to analyze the relationship between parenting style and food consumption patterns and the incidence of stunting in toddlers aged 24–60 months within the X Community Health Center area. This study employed a retrospective cross-sectional design. The study population included mothers of children aged 24–60 months who were stunted and resided in Bangka Lelak and Lentang Villages under the jurisdiction of the X Community Health Center, totaling 70 children. A non-probability purposive sampling technique was used, resulting in a sample of 60 respondents. Data on parenting styles and food consumption were collected using a validated parenting style questionnaire and a Food Frequency Questionnaire (FFQ), while data on stunting were obtained from height measurements recorded by the X Community Health Center. The findings showed that 36.7% of respondents adopted a permissive parenting style, and 86.7% demonstrated poor food consumption patterns. A total of 70% of the toddlers were categorized as stunted. The Spearman Rank correlation test indicated a significant relationship between parenting style and the incidence of stunting ($p = 0.000$). Similarly, a significant association was found between food consumption patterns and stunting ($p = 0.000$). Logistic regression analysis revealed that children of mothers with poor parenting styles were 0.159 times more likely to experience stunting compared to those with good parenting. Furthermore, children of mothers with poor food consumption patterns were 0.043 times more likely to be stunted than those whose mothers had good dietary practices.

Keywords: Food Consumption Patterns, Nutrition, Parenting Style, Stunting, Toddlers

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INTRODUCTION

According to the Ministry of Health of the Republic of Indonesia, stunting is defined as a condition in which a toddler's height-for-age z-score falls below -2 standard deviations (classified as stunted) or below -3 standard deviations (classified as severely stunted) (15). Stunting, a form of impaired linear growth, typically occurs during the first two to three years of life

and results from inadequate energy and nutrient intake as well as recurrent infections (5).

Globally, in 2020, an estimated 22% or 149.2 million children under five years of age were stunted. According to the 2021 Indonesian Nutritional Status Survey (SSGI), the national prevalence of stunting declined to 24.4%, though it remains above the World Health Organization (WHO) target of less than

20% (8). The same report indicated that East Nusa Tenggara had a stunting prevalence of 37.8%, one of the highest in the country. In Manggarai Regency, as of August 2022, 4,313 toddlers were reported to be stunted (12), while in the X Community Health Center area, 246 children were recorded as stunted as of February 2023 (17).

Stunting can impair brain development and has long-term consequences, including reduced cognitive abilities, lower academic achievement, and increased risk of chronic diseases such as diabetes and hypertension (13). According to the Directorate of Non-Communicable Disease Prevention and Control, effective stunting prevention must address improvements in dietary intake, parenting practices, sanitation, and access to clean water.

Parental care, particularly the parenting style of mothers, plays a significant role in influencing children's dietary habits. Positive parenting practices are generally associated with healthier food intake, better nutritional status, and optimal child development (4). Kusumawardani and Ashar (2022) also emphasized that poor nutritional intake contributes to stunted growth, delays in motor and language development, and socio-emotional difficulties. Therefore, parents must foster consistent habits of providing balanced and nutritious meals to meet their children's daily nutritional needs (10).

In Manggarai District, efforts to accelerate stunting prevention have included village-level issue mapping and monitoring. However, several key indicators, particularly those related to parenting practices and food consumption behaviors, require further support and targeted interventions (6). Based on this background, the present study aims to examine the relationship

between parenting style and food consumption patterns with the incidence of stunting among toddlers aged 24–60 months in the X Community Health Center area.

METHODS

The study population comprised all mothers of stunted children aged 24–60 months residing in Bangka Lelak and Lentang villages within the jurisdiction of the X Community Health Center, totaling 70 children. The study employed a non-probability sampling approach, specifically purposive sampling. A total of 60 respondents were selected, with an additional three respondents included to account for potential dropouts, yielding a final sample size of 63.

The study was conducted from March to May 2023 in Bangka Lelak and Lentang villages, under the X Community Health Center's service area. Data were collected using a structured parenting style questionnaire and a Food Frequency Questionnaire (FFQ) to assess food consumption patterns. Primary data consisted of responses to the parenting style and food consumption pattern questionnaires. Stunting data were obtained from child height measurements conducted and recorded by the X Community Health Center. Secondary data included demographic information such as maternal age, education level, family income, and the child's age and gender, gathered through interviews and supplemental questionnaires.

Univariate analysis was used to describe variables including maternal age, education level, family income, child gender, parenting style, food consumption patterns, and stunting incidence. Bivariate analysis was performed using the Spearman Rank correlation test to determine the

relationships between parenting style and stunting, as well as between food consumption patterns and stunting. Multivariate analysis was conducted using multiple logistic regression to identify the influence and strength of the independent variables on the dependent variable.

RESULTS AND DISCUSSION

Table 1 presents the demographic characteristics of the respondents. The majority of respondents were aged between 21 and 30 years, totaling 28 individuals (46.7%). Most respondents had completed only elementary school education, accounting for 33 individuals (55.0%). Regarding income, all respondents reported earning below the minimum regional wage of IDR 1,250,000, indicating economic hardship. The majority of the children were aged between 24 and 48 months (43 children or 71.7%), and more than half were male (33 children or 55.0%). Most children were classified as stunted (short stature), with 42 cases (70.0%).

Regarding parenting style, most respondents practiced a permissive parenting style (22 respondents or 36.7%). In terms of food consumption patterns, nearly all respondents demonstrated inadequate dietary practices (52 respondents or 86.7%).

Table 2 shows that among the 22 respondents with a permissive parenting style, the majority had children classified as stunted (77.3%). In contrast, of the 14 respondents with a neglectful parenting style, almost all had children in the severely stunted category (78.6%). Spearman's Rho analysis revealed a significant relationship between parenting style and stunting incidence among toddlers aged 24–60 months in the X Health Center area ($p = 0.000$).

Table 1. Frequency Distribution of Respondent Characteristics

Characteristic	f	%
Age (years)		
21-30	28	46.7
31-40	23	38.3
41-50	9	15.0
Education Level		
Elementary School	33	55.0
Junior High School	9	15.0
Senior High School	16	26.7
Bachelor's Degree	2	3.3
Income Level		
<IDR 1,250,000	60	100.0
>IDR 1,250,000	0	0.0
Child Age (months)		
24-47	43	71.7
48-60	17	28.3
Child's Gender		
Male	33	55.0
Female	27	45.0
Growth Status		
Severely Stunted	18	30.0
Stunted	42	70.0
Parenting Style		
Democratic	9	15.0
Authoritarian	15	25.0
Permissive	22	36.7
Neglectful	14	23.3
Food Consumption Pattern		
Good	0	0.0
Fair	8	13.3
Poor	52	86.7

(Source: Primary Data, 2023)

The relationship exhibited a moderate negative correlation ($r = -0.550$), indicating that poorer parenting styles were associated with higher rates of stunting.

Table 3 shows that among the 52 respondents with poor dietary practices, 78.8% of their children were stunted. Spearman's Rho analysis confirmed a statistically significant relationship between food consumption patterns and stunting incidence in toddlers ($p=0.001$), with a moderate negative correlation ($r=-0.492$).

Table 2. Cross Tabulation and Statistical Test Results of the Relationship Between Parenting Style and Stunting Incidence in Toddlers Aged 24–60 Months in the X Health Center Area

Parenting Style	Severely Stunted (n/%)	Stunted (n/%)	Total (n/%)	p-value
Democratic	0 (0.0%)	9 (100.0%)	9 (100.0%)	0.000
Authoritarian	2 (13.3%)	13 (86.7%)	15 (100.0%)	
Permissive	5 (22.7%)	17 (77.3%)	22 (100.0%)	
Neglectful	11 (78.6%)	3 (21.4%)	14 (100.0%)	
Total	18 (30.0%)	42 (70.0%)	60 (100%)	

(Source: Primary Data, 2023)

Table 3. Cross Tabulation and Statistical Test Results of the Relationship Between Food Consumption Patterns and Stunting Incidence in Toddlers Aged 24–60 Months in the X Health Center Area

Food Consumption Pattern	Severely Stunted (n/%)	Stunted (n/%)	Total (n/%)	p-value
Good	0 (0.0%)	0 (0.0%)	0 (0.0%)	0.000
Fair	7 (87.5%)	1 (12.5%)	8 (100.0%)	
Poor	11 (21.2%)	41 (78.8%)	52 (100.0%)	
Total	18 (30.0%)	42 (70.0%)	60 (100%)	

(Source: Primary Data, 2023)

Table 4. Cross Logistic Regression Test Results on the Relationship Between Parenting Style and Food Consumption Patterns with Stunting Incidence in Toddlers Aged 24–60 Months in the X Health Center Area

Independent Variables	p-value	Odds Ratio (OR)	95% Confidence Interval (CI)
Parenting Style	0.001	0.159	0.051-0.494
Food Consumption Pattern	0.015	0.043	0.003-0.536

(Source: Primary Data, 2023)

Table 4 presents the results of logistic regression analysis. Children whose mothers exhibited poor parenting styles were 0.159 times more likely to experience stunting compared to children with mothers who demonstrated good parenting practices ($p = 0.001$, $OR = 0.159$, $95\% \text{ CI} = 0.051-0.494$). Regarding food consumption, children of mothers with inadequate dietary patterns were 0.043 times more likely to be stunted compared to those whose mothers had adequate dietary practices ($p = 0.015$, $OR = 0.043$, $95\% \text{ CI} = 0.003-0.536$).

The majority of respondents were aged between 21–30 years, indicating that many mothers were relatively young and possibly lacked experience in parenting. Conversely, older parents may face physical limitations that hinder optimal childcare practices. This finding is consistent with the study by Christiana et al. (2022), which reported that 56% of mothers were aged between 20–35 years (4).

Mothers with intermediate levels of education were more likely to be permissive in their parenting approaches compared to those with lower

educational attainment. Low maternal education is often associated with limited access to parenting and nutritional information, increasing the risk of stunting. This result supports the findings of Baidho et al. (2021), which showed that 18.1% of children with stunted growth had mothers with low education levels (3).

All respondents in this study were from low-income households, with most working as farmers, resulting in irregular earnings. These economic constraints limited their purchasing power, especially in accessing nutritious food, thereby contributing to stunting in children. This finding is in line with Hayati et al. (2019), who found a significant association between socioeconomic status and stunting ($p = 0.041$) (2).

A common issue identified among parents was picky eating behavior in children, particularly a reluctance to consume vegetables and fruits. Children aged 24–47 months tend to be highly active and focused on play, which can reduce their interest in eating. This finding aligns with Hayati et al. (2019), who reported that 90.6% of toddlers were within this age range (2).

Male toddlers, who tend to be more physically active, may become distracted during meals. When coupled with inadequate parental supervision, this behavior may lead to poor nutrient intake and increased risk of stunting. Larasati (2017) found that male toddlers had a 3.111 times higher risk of stunting compared to females (95% CI: 1.605–6.030) (11).

Many respondents exhibited permissive parenting styles, often resulting in excessive indulgence. Some demonstrated neglectful parenting, characterized by low involvement and

minimal supervision of children's eating habits. Limited knowledge and financial constraints also contributed to a lack of dietary variety and poor meal preparation, leading children to prefer snacks over nutritious meals. Christiana et al. (2020) similarly reported that 62% of mothers exhibited permissive parenting (4).

The most frequently consumed food was rice, with limited intake of vegetables such as cassava leaves, pumpkin, and sweet potato leaves. Common side dishes included tofu and tempeh, while fish, meat, and fruits were rarely consumed. This dietary pattern is consistent with Amalia (2021), who reported that 57.6% of respondents exhibited inadequate dietary patterns (1).

Although health services in the X Health Center area have made efforts to address stunting, challenges remain due to low maternal education, which hampers information absorption and comprehension. Additionally, financial constraints limit access to nutritious food. These findings are supported by Hayati et al. (2019), who also reported a significant relationship between family income and stunting ($p = 0.041$) (2).

The analysis revealed a significant negative correlation between parenting patterns and stunting in toddlers aged 24–60 months in the X Health Center area, with a moderately strong relationship ($r = -0.550$). Better parenting practices were associated with a lower incidence of stunting. This result supports the findings of Sofa Fatonah (2020), who reported a significant relationship between parenting styles and stunting in children aged 24–59 months ($p = 0.003$) (7).

A significant negative correlation was also observed between food consumption patterns and stunting ($r = -$

0.492), indicating that poor dietary habits were associated with increased stunting rates. This finding is consistent with Khairunnas and Srimulyani (2021), who found a significant relationship between dietary patterns and stunting ($p = 0.000$) (9).

Parenting patterns emerged as the most influential factor associated with stunting. Mothers with better understanding of parenting, particularly in food preparation and feeding practices, positively influenced their children's nutritional status. This is supported by Widyaningsih et al. (2018), who found that a large proportion of stunted children had poor eating habits influenced by inadequate parenting (16).

RESEARCH ETHIC

This study received ethical approval from the Research and Community Service Institute of Universitas Katolik Indonesia Santu Paulus Ruteng (approval letter No. 91b/USP/L02/K/03/2023). Ethical principles were upheld throughout the study, emphasizing utility, respect for human dignity, justice, and the protection of participants' rights and welfare. Informed consent was obtained from all respondents prior to their participation.

CONFLICT OF INTEREST

The authors declare no conflict of interest related to this study.

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CONCLUSION

A substantial proportion (70.0%) of respondents had children with stunted growth. Permissive parenting styles were observed in 36.7% of participants, while 86.7% exhibited poor food consumption patterns. There was a significant relationship between parenting styles and stunting among toddlers aged 24–60 months ($p = 0.000$; $r = -0.550$), as well as between food consumption patterns and stunting ($p = 0.000$; $r = -0.492$). The most influential factor in stunting was parenting style (Odds Ratio = 0.159). These findings highlight the importance of targeted interventions focusing on parenting education and improved nutrition to reduce stunting in early childhood.

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