

The Relationship Between Parental Income and the Role of Parental or Babysitter Care on the Incidence of Stunting

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Abstract

Introduction: Nutrition plays a crucial role in child growth and development. In Indonesia, stunting remains a major public health problem, with a prevalence of 21.5%, influenced by maternal health, socioeconomic conditions, and caregiving practices. **Objective:** This study aimed to determine the relationship between parental income, parental caregiving, and babysitter caregiving with stunting among children aged 24–59 months in the working area of the Ponggok Community Health Center in 2025.

Method: This study employed an observational analytic method with a retrospective case-control design and was not a case report. The population consisted of mothers with toddlers aged 24–59 months. A total of 84 respondents were selected using consecutive sampling, comprising 42 stunted toddlers (case group) and 42 non-stunted toddlers (control group). Stunting status was determined based on height-for-age z-scores (HAZ) according to WHO standards. The independent variables were family income and caregiving roles of parents and babysitters, while the dependent variable was stunting incidence. Data were collected from Maternal and Child Health (KIA) books and structured questionnaires and analyzed using univariate analysis and Chi-Square tests ($p < 0.05$). **Result and Discussion:** Parental income was not significantly associated with stunting ($p > 0.05$), suggesting that income alone may not directly determine child growth outcomes. Factors such as nutrition knowledge, resource allocation, access to health services, and environmental conditions may influence this relationship. **Conclusion:** In contrast, parental and babysitter caregiving roles showed significant associations with stunting ($p < 0.05$), highlighting the importance of caregiving quality.

Introduction

According to the results of the 2024 Indonesian Nutrition Status Survey, the prevalence of stunting reached 19.8% in 2024, a decrease of 1.7% from the prevalence of stunting in Indonesia in 2023, which was 21.5%. The realization of the reduction in stunting is still far from the target of 14 percent in 2024. According to data from the 2024 Indonesian Nutrition Status Survey, Blitar Regency ranks 12th out of 38 regencies/cities in terms of stunting rates in East Java. Stunting is caused by various interrelated factors, not only poor nutrition in pregnant women or toddlers.

Poverty limits families' ability to meet their nutritional needs, access adequate health care, and provide a healthy environment for their children to grow up in. Limited income prevents households from providing quality food for pregnant women and toddlers, the two groups most vulnerable to malnutrition. It is under these conditions that the risk of stunting increases because children do not consistently receive sufficient essential nutrients during the 1,000 HPK period (Ramadhan et al. (2024)).

Working mothers who leave their children with babysitters or other relatives cause suboptimal childcare because mothers, who usually play the role of primary caregivers, leave home to work abroad. The shift in childcare to grandparents, relatives, or even other parties is often not balanced with adequate nutritional knowledge and practices.

Inaccessibility to daily nutritional needs, which ultimately means that economic status has a significant effect on the incidence of malnutrition. Toddlers from families with low economic status are twice as likely to experience stunting compared to toddlers from families with high economic status. Socioeconomic status is also greatly influenced by family income. If household access to food is disrupted, especially due to poverty, then malnutrition, including stunting, will inevitably occur (Yunita et al., 2022).

Families with limited income are more vulnerable to food insecurity, both in terms of food quality and quantity. Household income plays an important role in shaping dietary patterns, as increased income can influence food choices and access to more nutritious foods. However, higher food expenditure does not always guarantee greater dietary diversity, as food preferences, nutrition knowledge, and food availability also contribute to consumption patterns. Adequate family income supports optimal child growth and development because parents are better able to fulfill their children's essential needs, including nutrition, healthcare, education, and other developmental requirements (Rachmi et al., 2021; UNICEF, 2023).

Another cause is that the role of the primary caregiver greatly determines the quality of a child's growth and development, including the risk of stunting. The primary caregiver, whether a parent, other family member, or babysitter, is in control of meeting the child's basic needs, such as feeding, stimulation, hygiene, and access to health services. Children who are cared for directly by their parents, especially their mothers, generally receive more optimal attention in terms of feeding practices, breastfeeding, complementary feeding, and growth and development monitoring, thereby contributing to better nutritional status. Conversely, parenting by other family members or babysitters tends to be less consistent in terms of feeding frequency, food quality, and hygiene practices, which can increase the risk of growth disorders (Rahmadiyah et al., 2024).

Method

This study employed an observational analytic method with a retrospective case-control design and was conducted in the working area of the Ponggok Community Health Center, Blitar Regency, Indonesia, in 2025. The research targets were mothers with children aged 24–59 months. A total of 82 respondents were included, consisting of 41 mothers of stunted children as the case group and 41 mothers of non-stunted children as the control group. The samples were selected using a consecutive sampling technique, in which all eligible respondents who met the inclusion criteria were recruited sequentially until the required sample size was achieved. The dependent variable in this study was the incidence of stunting, determined based on height-for-age z-scores (HAZ) according to the World Health Organization (WHO) Child Growth Standards, where children with $HAZ < -2$ standard deviations were classified as stunted. The independent variables were family income and the dominant caregiver role, which was categorized into parental care and non-parental care (babysitter or other family members)

Data were collected using both secondary and primary data sources. Anthropometric and child growth data were obtained from the Maternal and Child Health (KIA) book, while information regarding family income and caregiver roles was collected through structured questionnaires developed based on relevant literature and adjusted to the study objectives. Data analysis was performed using statistical software. Univariate analysis was conducted to describe the characteristics of respondents and the distribution of each study variable. Bivariate analysis using the Chi-Square test was applied to examine the association between family income, caregiver roles, and stunting incidence. The strength of the association was expressed as odds ratios (OR) with 95% confidence intervals (CI), and statistical significance was determined at $p < 0.05$. All respondents provided informed consent prior to participation, and confidentiality of the data was strictly maintained.

Research and Discussion

1. Result

Characteristics Respondents

The respondents in this study consisted of 82 mothers, with 41 mothers having stunted children and 41 mothers having non-stunted children aged 24-59 months. The characteristics of the respondents based on age can be seen in the following table:

Table 1
Characteristics of the Respondent

Variable	Category	n	Percentage(%)
Mother's age	21-30 years	35	42.7%
	31-40 years	37	45.1%
	41-51 years	10	12.2%
Child's sex	Male	36	43.9%
	Female	46	56.1%
Total Respondent		82	100%

Univariate Analysis

Univariate analysis revealed the frequency distribution according to stunting cases in children aged 24-59 months, including the role of parental and babysitter care, and family income in the working area of the Ponggok Community Health Center in Blitar Regency. The details of the study are described in the following frequency distribution:

Table 2
Frequency Distribution

Independent Variable	Stunting Status		Total
	Stunted	Non-Stunted	
	Frequency (%)	Frequency (%)	
Dominant Caregiver Role			
Parent themselves	30 (73.2%)	37 (90.2%)	67 (81.7%)
Babysitter/other family	11 (26.8%)	4 (9.8%)	15 (18.3%)
Family income			
≤ 2.500.000	34 (82.9%)	28 (68.3%)	62 (75.6%)
>Rp 2.500.000	7 (17.1%)	13 (31.7%)	20 (24.4%)

From Table 2 above, it can be concluded that the dominant caregiver role for stunted children is more often performed by the parents themselves (73.2%) than by other caregivers (26.8%). Families with an income of less than Rp2,500,000 have the highest percentage of stunting (73.2%) compared to other income groups.

Bivariate Analysis

Table 3
Bivariate Analysis

Independent Variable	Stunting Status		p-value	OR 95% C.I (Low-Up)
	Stunted	Non-Stunted		
	Frequency (%)	Frequency (%)		
Dominant Caregiver Role				
Parent themselves	30 (73.2%)	37 (90.2%)		
Babysitter/other family	11 (26.8%)	4 (9.8%)	0.046	0.295 (0.085-1.020)
Family income				
≤ 2.500.000	34 (82.9%)	28 (68.3%)		
>Rp 2.500.000	7 (17.1%)	13 (31.7%)	0.123	0.443 (0.156-1.262)

The results of the test on the dominant parenting role showed that it was associated with the incidence of stunting in toddlers ($p<0.05$). Parents who did not care for their own children or whose children were cared for by babysitters/other family members were a protective factor against stunting in toddlers, with a 0.295 times greater likelihood of having stunted toddlers compared to mothers who cared for their own children ($p=0.046$; OR=0.295; CI=0.085-1.020). Meanwhile, family economic status showed no significant association with stunting in toddlers ($p>0.05$).

2. Discussion

Maternal caregiving practices play an essential role in preventing stunting and are strongly influenced by maternal knowledge, attitudes, and behaviors. Recent studies indicate that mothers' knowledge related to child nutrition and health is shaped by education level, access to health information, media exposure, and personal experience, which subsequently affects feeding practices and health-seeking behaviors for children (Black et al., 2021; UNICEF, 2023). Adequate maternal knowledge contributes to appropriate complementary feeding, timely healthcare utilization, and better child growth outcomes.

In the context of dominant caregivers, several recent studies have reported that children who are primarily cared for by their parents tend to have better nutritional outcomes compared to those entrusted to non-parental caregivers, such as babysitters or extended family members (Rachmi et al., 2021; Prendergast & Humphrey, 2022). Working mothers who rely on alternative caregivers may face challenges in directly supervising their children's dietary intake and daily care, potentially increasing the risk of inadequate nutrition and stunting. These findings highlight the importance of strengthening caregiver capacity and ensuring consistent, appropriate caregiving practices regardless of the caregiver type.

Parents, especially mothers, usually have a better understanding of their children's nutritional needs, eating patterns, and health care than other caregivers. This knowledge is very important to ensure that children get adequate and balanced nutrition, which is key to preventing stunting.

Research conducted by (Jannah, 2023) suggests that good parenting in meeting biomedical, mental, and emotional needs helps reduce the risk of stunting. Parents who are active and knowledgeable about childcare are able to provide stimulation, maintain hygiene, and monitor their children's nutritional intake, thereby supporting optimal growth and development and preventing stunting.

Children who are cared for by grandparents or babysitters may be at higher risk of stunting if the caregiver does not have optimal knowledge and attention to the child's nutritional and health needs (Arwati and Blongkod, 2024). Babysitters or grandparents may not fully understand the specific needs of children, such as feeding frequency, nutritional quality, and developmental stimulation. Care by other people also sometimes reduces optimal time and attention, and if the interaction is of poor quality, it can affect the child's psychosocial development and growth. However, if grandparents or babysitters receive good education and understanding about nutrition and parenting, the risk of stunting can be minimized, but this is still less common than care by the parents themselves (Pangestu et al., 2025).

According to research conducted by (Juwita et al., 2019), family income is only a means of meeting food needs, with other factors such as parental knowledge and skills also playing a role.

Another study conducted by (Sheren O. Nesimnasi et al., 2025) found that low family income can also be influenced by the mother's employment status. There are many families who, despite having low incomes, are able to meet their children's nutritional needs. Some families use their family income for food needs by planting vegetable gardens and raising livestock, the produce of which can be consumed by the family and used to meet their food needs, thereby reducing family expenses.

Another study conducted by (Putri and Muniroh, 2023) suggests that other factors such as toddler characteristics and food security also need to be considered in stunting prevention efforts.

Conclusion

The results show that although low-income families are often associated with the risk of malnutrition, in the context of this study, socioeconomic status was not found to have a significant relationship with stunting. This indicates that economic factors are not the only or dominant factors affecting toddler growth in this region. It is possible that government interventions, food aid, or relatively equitable access to health care have meant that economic differences are not a major determining factor.

Parenting patterns have been proven to be a key factor in determining children's nutritional status and growth. Toddlers who are cared for directly by their parents, especially their mothers, tend to receive optimal attention in terms of breastfeeding/complementary feeding, hygiene, stimulation, and growth monitoring. Conversely, toddlers who are predominantly cared for by babysitters or irregular caregivers show a higher risk of stunting due to potential inconsistencies in feeding, low quality of care, and caregivers' lack of understanding of children's nutritional needs. Thus, the quality and consistency of parenting patterns are more decisive factors than the economic conditions of the family.

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