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The Effect of Mother's Knowledge about Stunting Prevention on Incidents of Stunting in Gunung Leutik Village, Ciparay Subdistrict, Bandung District

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Abstract
Stunting is a condition in which a child experiences growth disturbances, resulting in a height that is not appropriate for their age. This condition is caused by chronic nutritional problems, namely a lack of nutrient intake over a long period, starting from pregnancy. In addition, it is also exacerbated by mothers' lack of knowledge regarding stunting prevention. Ciparay Subdistrict is the second priority area in Bandung District with a relatively high stunting rate of 25%. The purpose of this study was to determine the effect of mothers' knowledge about stunting prevention on the incidence of stunting in Gunung Leutik Village, Ciparay Subdistrict, Bandung District. The research method used was a quantitative descriptive approach with simple linear regression analysis. The population consisted of 149 mothers of toddlers, and the sample included 60 respondents selected using accidental sampling. The results of the study with simple linear regression analysis produced a regression coefficient (b) of -0.135 and an intercept (a) of 1.638, resulting in the regression equation Y = 1.638 – 0.135X. It can be concluded that every one-level increase in knowledge reduces the incidence of stunting by 0.135. In other words, the higher the mother's knowledge about stunting prevention, the lower the incidence of stunting. Based on these results, it is expected that mothers of toddlers will improve their knowledge regarding stunting prevention.

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Introduction

Indonesia's current health development is focused on improving the quality of human resources, particularly through maternal and child health services (Rahma, AKI, & AKB, 2022). This focus is based on the understanding that healthy children come from healthy mothers, and both are essential in producing a high-quality generation in the future. Therefore, children's health must be addressed from an early stage, especially during the "Window of Opportunity" period, also known as the golden period of growth, which lasts from pregnancy until a child reaches two years of age (Likhar & Patil, 2022)

One of the primary problems affecting this golden period is malnutrition. According to data from the World Health Organization (WHO) in 2020, globally, 5.7% of toddlers were overweight, 6.7% suffered from undernutrition and severe wasting, and 22.2% were stunted. The global prevalence of stunting is considered high because it exceeds the 20% threshold (Kementrian Kesehatan Republik Indonesia, 2022); (Lanita, Al Nabila, Hidayati, Siregar, & Kasyani, 2023).

Stunting is a condition of impaired growth and development in toddlers due to chronic malnutrition, resulting in a child being too short for their age (da Silva, da Silva, Ximenes, Cabral, & dos Santos Ximenes, 2024); (Tiyas & HasanBasri, 2023). This condition begins in the womb and continues during early childhood, but the physical signs only become apparent after the child turns two (Nasution, 2024). According to WHO-MGRS 2006 and the Indonesian Ministry of Health, stunting is defined as a child having a height-for-age z-score below -2 SD, while severely stunted is below -3 SD (TNP2K, 2017).

The Indonesian government has set a target to reduce the prevalence of stunting to 14.2% by 2029, as outlined in the National Medium-Term Development Plan (RPJMN) 2025–2029. In alignment with the Sustainable Development Goals (SDGs) 2030, Indonesia has also committed to eliminating all forms of malnutrition, including stunting (Rahmadhita, 2020). However, data from the 2023 Indonesian Health Survey (SKI) showed that the national prevalence of stunting remained high at 21.5%, with West Java Province recording a slightly higher rate of 21.7% (Kementrian Kesehatan Republik Indonesia, 2023).

The situation is even more concerning in Bandung Regency, where the stunting prevalence reached 29.72%, spread across eight priority sub-districts, including Gunung Leutik Village, which falls under the jurisdiction of Pakutandang Public Health Center (Puskesmas). This Puskesmas set a target to reduce stunting by 46.5%, but as of December 2023, only a 16.5% reduction had been achieved. The number of stunted toddlers in the five villages served by this Puskesmas remains high, with Gunung Leutik Village reporting 88 cases (Puskesmas Pakutandang, 2023).

Stunting has both short-term and long-term impacts on human resource quality. In the short term, affected children appear shorter than their peers, suffer from weakened immunity, and experience delays in cognitive, social, and language development. In the long term, stunted children are more likely to have lower IQs, poor academic performance, increased risk of school dropouts, and a higher likelihood of chronic diseases such as diabetes, hypertension, and heart disease in adulthood. Stunted females are also more likely to give birth to stunted children, perpetuating the intergenerational cycle of stunting (Dermawan, Mahanim, & Siregar, 2022); (Thasim & Anggraeny, 2023).

One of the initial steps mothers can take to detect stunting in their children is to monitor their growth, as stunted children typically appear shorter than peers of the same age and gender. Therefore, measuring a child's height is a critical early step in detecting stunting risk (Herlina, 2021)

Health facilities such as Posyandu and Puskesmas are available for mothers to monitor their children's growth, including height measurements. However, in Gunung Leutik Village, only 45% of mothers with toddlers regularly visit these facilities. This indicates a lack of awareness among mothers about the importance of growth monitoring. As a result, many mothers miss out on health education and stunting prevention programs offered at Posyandu and Puskesmas, such as education on the first 1,000 days of life, maternal and child health classes, child development sessions, and supplementary feeding programs (Puskesmas Pakutandang, 2023).

Optimizing mothers' roles in preventive and promotive efforts is crucial to ensuring optimal child growth and development. However, limited maternal knowledge about stunting and its prevention may delay detection and response, thereby increasing the risk. Research has shown that maternal knowledge is a key factor influencing stunting. Mothers with poor knowledge are 1.644 times more likely to have stunted children than those with good knowledge (Rahmandiani, Astuti, Susanti, Handayani, & Didah, 2019)

This is supported by studies such as Megalea Rut H. et al. (2020), which found a significant relationship between maternal knowledge and stunting in Tangerang. Similarly, research by Aghadianti et al. (2023) found that 67.7% of mothers had poor knowledge of child nutrition, and children of these mothers were more likely to be stunted. A chi-square analysis revealed a significant relationship between maternal knowledge and stunting, with a p-value of 0.001 ($p \leq 0.05$).

One of the government's efforts to reduce stunting is through the *Scaling Up Nutrition (SUN)* movement, which focuses on specific interventions during the first 1,000 days of life. This international initiative aims to accelerate nutritional improvements, particularly through breastfeeding, safe sanitation, improved breastfeeding practices, routine immunization, growth monitoring, and healthy lifestyle education (Rahmandiani et al., 2019)

Based on the description above, the researcher is interested in conducting a study entitled: "The Effect of Mother's Knowledge about Stunting Prevention on the Incidents of Stunting in Gunung Leutik Village, Ciparay Sub-district, Bandung district."

Method

The research method used in this study is a quantitative descriptive method with a simple linear regression analysis approach, aiming to analyze the effect of maternal knowledge on stunting incidence, as well as to predict stunting incidence based on maternal knowledge using a simple linear model.

In this study, the dependent variable is the incidence of stunting, while the independent variable is the knowledge of mothers with toddlers regarding stunting prevention. The population in this study includes all mothers with children aged 1–5 years in Gunung Leutik Village, Ciparay Subdistrict, totaling 149 individuals. The sampling technique used is accidental sampling, which is a technique based on chance encounters, where any respondent who happens to meet the researcher and is considered suitable as a data source is included in the sample. The sample in this study consists of 60 mothers of toddlers in Gunung Leutik Village.

Data collection was carried out by distributing informed consent forms and questionnaires to mothers of children aged 1–5 years regarding stunting prevention. Primary data were obtained through the questionnaires filled out by the respondents, while secondary data were obtained indirectly from the village, specifically data on the number of stunted children aged 1–5 years in Gunung Leutik Village.

The instruments used in this study include the Child Health Card (KMS), a weighing scale, a microtoise (height measuring tool), and a questionnaire. The weighing scale, KMS, and microtoise were used to assess the nutritional status of the children, while the questionnaire was used to measure the mothers' knowledge of stunting prevention in Gunung Leutik Village. The questionnaire was a self-developed instrument by the researcher and had undergone both validity and reliability testing.

According to Sugiyono (2020), the number of respondents for validity and reliability testing is 30% of the total research sample. As the total sample in this study is 60 mothers, 18 respondents were selected for the testing phase, conducted in Cikoneng Village, Ciparay Subdistrict, Bandung Regency. Validity testing was performed using the Product Moment correlation method. Out of 40 items tested, 33 questions were found valid and 7 questions were invalid. The reliability test was conducted using the Cronbach's Alpha coefficient, which showed a result of 0.888, indicating that the questionnaire was reliable.

Research and Discussions

1. Result

Based on the data collected through the distribution of questionnaires to mothers of toddlers — consisting of 33 question items — data analysis was conducted, and the frequency distribution of maternal knowledge regarding stunting prevention is presented in the following table:

Table 1
Frequency Distribution of Maternal Knowledge on Stunting Prevention

Category	Number of Respondents	Percentage
Good	10	16.7%
Fair	33	55%
Poor	17	28.3%
Total	**60**	**100%**

Source: Primary Data, 2024

Based on the table above, the knowledge level of mothers with toddlers regarding stunting prevention in Gunung Leutik Village is categorized as good for 10 respondents (16.7%), fair for 33 respondents (55%), and poor for 17 respondents (28.3%).

Based on the data obtained from direct height measurements using a microtoise on 60 toddlers at Posyandu and sub-health centers (Puskesmas Pembantu) in Gunung Leutik Village, the frequency distribution of stunting incidence is presented in the following table:

Table 2
Frequency Distribution of Stunting Incidence

Category	Number of Respondents	Percentage
Stunted	35	58.3%
Sseverely Stunted	25	41.7%
Total	**60**	**100%**

Source: Primary Data, 2024

Based on the table above, stunting among toddlers in Gunung Leutik Village is categorized as stunted in 35 children (58.3%) and severely stunted in 25 children (41.7%). To determine the effect of maternal knowledge about stunting prevention on stunting incidence, a simple linear regression analysis was used. The scoring assumptions used in this analysis were: for the knowledge variable — Good (3), Fair (2), Poor (1); and for the stunting incidence variable — Stunted (2), Severely Stunted (1). The results are as follows:

Table 3
Simple Linear Regression Results

Parameter	Value
Regression Coefficient (b)	-0.135
Intercept (a)	1.638
Regression Equation	Y = 1.638 - 0.135X

Source: Linear regression analysis, 2024

The results of the simple linear regression analysis indicate a negative effect between maternal knowledge level and stunting incidence in toddlers. This is evidenced by the regression coefficient (b) value of -0.135, which means that for every one-point increase in the mother's knowledge level, the stunting incidence score decreases by 0.135 points. Overall, this negative relationship suggests that the better the mother's knowledge, the lower the likelihood of stunting in toddlers.

2. Discussion

Knowledge is a term used to describe a person's awareness or understanding of something. Knowledge always requires a subject who is consciously aware of an object being observed. Knowledge is the result of "knowing," which occurs after a person perceives a particular object. Behavior based on knowledge tends to be more enduring than behavior that is not supported by knowledge (Notoatmodjo, 2021).

This study is consistent with the research conducted by Erfiana (2021), which found a relationship between maternal knowledge and the incidence of stunting among toddlers. Mothers with good knowledge are more likely to update and enhance their existing knowledge, making it easier for them to accept new information when it is provided.

This research is also aligned with the study by Zogara et al. (2020), which found that maternal education has a significant relationship with stunting in toddlers. Parental education, particularly that of mothers, plays an essential role, as mothers with higher education levels are more aware of their children's health conditions. In contrast, low levels of education can result in limited knowledge about child health and difficulty in receiving and processing health information.

According to the researcher's assumption, the lack of maternal knowledge in this study is due to mothers never or rarely receiving information about stunting, particularly regarding how to meet their children's nutritional needs. Furthermore, there is a low level of attendance at Posyandu (Integrated Health Services Post) and Puskesmas (Community Health Centers), which limits mothers' exposure to health education, especially related to stunting. Based on the univariate data, the incidence of stunting in Gunung Leutik Village, Ciparay Subdistrict was categorized as stunted in 35 children (58.3%) and severely stunted in 25 children (41.7%). These data were obtained through height and age measurements of toddlers at Posyandu and Pustu (auxiliary health centers) using a microtoise and the Mother and Child Health (MCH) handbook. The total number of

children measured was 60 in Gunung Leutik Village, Ciparay Subdistrict, Bandung Regency.

Stunting is a growth disorder in children that leads to growth delays inconsistent with standard measures, resulting in both short-term and long-term effects (Fikawati, 2020). This is in line with the research by Dwitama et al. (2021), which stated that the problem of stunted or short children is caused by several factors. The primary causes include inadequate breastfeeding, poor complementary feeding, and micronutrient deficiencies, all of which are influenced by the mother's limited knowledge regarding child nutrition.

Research by Darsini (2019) explained that stunting in toddlers can be caused by poor parenting practices, limited access to healthcare services (including quality ANC, PNC, and early learning), insufficient access to nutritious food, lack of clean water and sanitation, inadequate complementary feeding, and infections (Ministry of Health, 2018).

The issue of stunting has an impact on the quality of human resources both in the short and long term. In the short term, stunting commonly results in a child's height being significantly below average for their age and gender by the time they reach two years old. Therefore, height measurement is the first step in detecting stunting risks in toddlers (Herlina et al., 2021).

One of the government's efforts to reduce stunting rates is through participation in the Scaling Up Nutrition (SUN) movement. This initiative includes specific interventions aimed at the first 1,000 days of life (HPK). The SUN movement is a global effort to improve and accelerate nutritional outcomes. In support of this, Pakutandang Health Center runs a program that provides additional food for 60 days routinely to help reduce the risk of stunting among children.

According to the researcher’s assumption, the stunting cases in Gunung Leutik Village are due to the majority of mothers having limited knowledge about how to prevent and detect stunting. This lack of knowledge results in poor fulfillment of children’s nutritional needs and a lack of awareness about appropriate growth and development milestones, which has led to numerous stunting cases in the village.

The results of the simple linear regression analysis showed a negative effect between maternal knowledge and stunting in toddlers. This is supported by the regression coefficient (b) value of -0.135, indicating that for every one-point increase in maternal knowledge (e.g., from poor to fair), the stunting score decreases by 0.135 points. Overall, this negative correlation suggests that the better a mother’s knowledge, the lower the likelihood of stunting in her child.

This study is consistent with research by Faradina et al. (2023) regarding the relationship between maternal knowledge and stunting in the working area of Suhaid Health Center. Their study found that out of 62 mothers of toddlers with poor knowledge, 42 of their children aged 24–60 months were categorized as stunted or severely stunted. The study concluded that maternal knowledge significantly affects the incidence of stunting, as knowledgeable mothers are better equipped to improve their children's nutritional status and support optimal growth. Inadequate knowledge, lack of understanding of healthy eating habits, and insufficient awareness about stunting influence maternal behavior and attitudes toward providing appropriate food, both in type and quantity, for their children.

Therefore, to reduce the risk of stunting, the government continues its participation in the SUN movement, which implements specific interventions targeting the first 1,000 days of life (HPK). This international effort aims to strengthen national nutrition

improvement strategies. The Pakutandang Health Center itself has implemented a 60-day food supplementation program to help reduce the risk of stunting in toddlers.

Based on the researcher's assumption, the findings of this study demonstrate that maternal knowledge has an impact on stunting incidence in Gunung Leutik Village. The lack of maternal knowledge about how to meet children's nutritional needs and monitor their growth and development according to age has led to unrecognized stunting cases, which can have serious effects on children's growth.

Based on the discussion above, it is recommended that all mothers with toddlers have adequate knowledge regarding their children's nutritional needs, growth, and development. Mothers can obtain this knowledge by regularly visiting Posyandu or Puskesmas, where they can receive the necessary health education, especially regarding stunting prevention and early detection of growth disorders that may lead to stunting.

Conclusion

Based on the results of the study conducted on 60 mothers of toddlers using simple linear regression analysis, the findings showed indicate a negative effect between maternal knowledge level and stunting incidence in toddlers. This is evidenced by the regression coefficient (b) value of -0.135, which means that for every one-point increase in the mother's knowledge level, the stunting incidence score decreases by 0.135 points. Overall, this negative relationship suggests that the better the mother's knowledge, the lower the likelihood of stunting in toddlers.

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