

Maternal Knowledge and Parenting Practices Associated with Stunting Among Toddlers

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ABSTRACT

Introduction: Stunting is a chronic nutritional problem caused by prolonged nutrient deficiency. Inadequate maternal knowledge impairs understanding of balanced nutrition and growth monitoring, making it difficult for mothers to recognize early physical signs of stunting. Additionally, poor parenting practices lead to insufficient nutrient intake, inadequate illness care, and lack of developmental stimulation. Cumulatively, these suboptimal cognitive and behavioral factors serve as key determinants that directly jeopardize a child's nutritional status and long-term quality of life.

Objective: This study aims to analyze the association between maternal knowledge, parenting practices, and the incidence of stunting among toddlers.

Methods: A cross-sectional analytic study was conducted involving 92 mothers of toddlers aged 24–59 months. Samples were selected using proportional stratified random sampling. Data on maternal knowledge and parenting practices were collected using questionnaires, while toddlers' stunting status was determined through anthropometric classification based on height-for-age indices. Data analysis was performed using the Chi-square test.

Results: The study revealed that (36,96%) of the toddlers were stunted. Regarding the independent variables, (46,74%) of the mothers demonstrated low maternal knowledge, and [39,14%) practiced poor household parenting. Statistical analysis using the Chi-square test showed a significant association between maternal knowledge ($p < 0,001$) and parenting practices ($p < 0,001$) with the incidence of stunting among toddlers.

Conclusions: Maternal knowledge and parenting practices were significantly associated with stunting; however, causal inference cannot be made due to the cross-sectional design.

Introduction

Stunting is a major threat to the quality of Indonesia's human resources in the future. The condition of failure to thrive in toddlers due to chronic malnutrition, especially during the First 1,000 Days of Life, not only results in below-standard height but also hinders cognitive development, reduces adult productivity, and increases the risk of non-communicable diseases. Stunting remains a critical global health threat, affecting approximately 22.3% of children under five worldwide according to recent WHO and UNICEF joint estimates. In Indonesia, aggressive interventions have led to a positive decline in national prevalence from 21.5% in 2023 to 19.8% in 2024, based on the Indonesian Health Survey (SKI) data. (Galuh et al., 2024) (Kementerian Kesehatan RI, 2024)



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At the regional level, Central Java Province showed positive progress with a decrease in prevalence from 20.7% (2023) to 17.1% (2024). (Dinas Kesehatan Provinsi Jawa Tengah, 2025). A fluctuating pattern was actually seen in Boyolali Regency, where the prevalence had increased to 21.5% in 2023 before finally being suppressed to 11.8% in 2025. (Dinas Kesehatan Kabupaten Boyolali, 2025). A different condition was found in the working area of the Wonosamodro Primary Health Center. Data extracted from the electronic Community-Based Nutrition Reporting (e-PPGBM) system at the Wonosamodro Primary Health Center revealed that the local stunting prevalence staged a structural stagnation phase, remaining at 14.9% during the 2023–2024 period before decreasing slightly to 14.49% in 2025."

The factors causing stunting can be classified into two main categories: direct and indirect factors. Direct factors include inadequate nutritional intake and the presence of infectious diseases in toddlers. Meanwhile, indirect factors encompass family food security, the psychosocial environment, the availability of health services, as well as parenting styles and the parents' level of knowledge. (Galuh et al., 2024)

Chronic inadequate nutritional intake and recurrent infection lead to impaired linear growth, ultimately resulting in stunting. In the long term, this condition leads to detrimental cognitive, health, and productivity consequences. At the household level, maternal knowledge significantly influences feeding, hygiene, and growth monitoring practices. These factors are closely tied to parenting style, as parents are the ones who interact most intensely with children in fulfilling their daily needs (Batara & Darlis, 2024). Consequently, these parenting practices directly influence food provision, healthcare-seeking behavior, hygiene, and psychosocial stimulation. Conversely, a lack of maternal knowledge and inappropriate parenting can cause children to receive insufficient nutritional intake, lack proper care during illness, and receive minimal stimulation required to support optimal growth (Ikasari et al., 2024; Romena et al., 2025a). If this persists, such suboptimal care and nutritional intake will threaten the child's future quality of life (Fitri et al., 2025). Therefore, identifying these intricate associations is crucial to help guide primary health care education and family-based interventions.

A preliminary study at the Wonosamodro Community Health Center in January 2026 underscored the urgency of this issue. It revealed a prevalent misconception among mothers of toddlers who believe that stunting is solely due to genetic factors (heredity). Additionally, there is a tendency toward parenting practices that prioritize food quantity (as long as the child is full) over the quality of animal protein, compounded by childcare challenges faced by working mothers who leave their children in the care of grandmothers. Although maternal knowledge and parenting practices have been widely studied as factors associated with stunting, evidence from rural primary health care settings using proportional representation across villages remains limited, particularly in the Wonosamodro Primary Health Center working area. Therefore, this study aimed to analyze the association between maternal knowledge, parenting practices, and the incidence of stunting among toddlers aged 24–59 months in the working area of Wonosamodro Primary Health Center, Boyolali Regency.

Methods

Study Design

This study used an observational analytic design to observe phenomena and variables without providing interventions to the research subjects. The applied research design was cross-sectional to study the correlation dynamics between risk factors (independent variables) and effects (dependent variables) through simultaneous data collection at a specific point in time.



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Setting

The study was conducted in the working area of the Wonosamodro Primary Health Center, Kabupaten Boyolali, covering a total of 10 villages. Data collection was carried out from February to March 2026. Anthropometric measurements and interviews were conducted through posyandu visits

Research Subject

The population in this study consisted of all mothers with toddlers aged 24–59 months in the working area of the Wonosamodro Primary Health Center, totaling 1,139 people. Based on calculations using the Slovin formula with a significance level of 0.1, the sample size for this study was set at 92 respondents.

The sampling technique used was proportional stratified random sampling to ensure data representation from all areas. The sample size was proportionally divided for each of the 10 villages based on the toddler population in each respective area. The final selection of respondents in each village was conducted randomly using simple random sampling based on the list of names obtained from the e-PPGBM (Electronic-Community-Based Nutrition Recording and Reporting) data of the Wonosamodro Primary Health Center.

To ensure the accuracy and relevance of the data obtained, the subjects were selected based on the following criteria:

Inclusion Criteria:

- Mothers or primary caregivers of toddlers aged 24–59 months.
- Toddlers registered and residing in the working area of the Wonosamodro Primary Health Center.
- Mothers or caregivers who are willing to participate and sign the informed consent.
- Mothers or caregivers who are able to communicate clearly and answer the questionnaire.
- Toddlers who have complete and verifiable anthropometric data.

Exclusion Criteria:

- Toddlers with congenital abnormalities or medical conditions that directly affect physical growth.
- Toddlers with chronic diseases or severe physical/mental disability.
- Toddlers with incomplete height/length or age data.
- Mothers or caregivers who refused to complete the interview or questionnaire.
- Toddlers whose exact age could not be verified from official records (e.g., birth certificate or MCH handbook/Buku KIA).

Instruments

Data on maternal knowledge and parenting styles were collected using structured questionnaires. The validity and reliability tests were performed on the questionnaires measuring predisposing factors specifically maternal knowledge (10 items), cultural influence (7 items), and socioeconomic status (5 items) as well as reinforcing factors, namely parenting style (15 items). Based on the statistical analysis, all items across these variables were declared valid, as every question item achieved a calculated r-value greater than the critical r-table threshold of 0.3. Furthermore, the internal consistency tests demonstrated high reliability for the instruments:



1. The Maternal Knowledge questionnaire (consisting of 10 items) achieved a Cronbach's Alpha coefficient of 0.799.
2. The Parenting Style questionnaire (consisting of 15 items, encompassing nutritional care, health care, and psychosocial stimulation) achieved a Cronbach's Alpha coefficient of 0.877.

Since the Cronbach's Alpha values for both questionnaires were significantly greater than the standard threshold of 0.60 (and), the instruments were proven to be highly reliable and stable for data collection. The detailed results of the validity and reliability tests are attached in the appendix.

For the dependent variable (stunting status), anthropometric data (height-for-age) were obtained through primary data collection through direct measurements using a calibrated stadiometer or microtoise. Measurements were performed by the researcher and trained integrated health post (Posyandu) cadres who had undergone standardized training to minimize inter-observer measurement errors.

Data Analysis

The collected data were processed and analyzed using SPSS software. Quantitative data analysis included univariate analysis to determine the frequency distribution of respondent characteristics, maternal knowledge, parenting styles, and the incidence of stunting. Bivariate analysis was then performed using the Chi-Square test to analyze the relationship between the independent variables (maternal knowledge and parenting styles) and the dependent variable (incidence of stunting) with a significance level of .

Ethical Consideration

This study was approved by the Health Research Ethics Committee (HREC) of Universitas Muhammadiyah PKU Surakarta with ethical clearance number 076/LPPM/UMPKU/II/2026. Written informed consent was obtained from all participants (mothers or legal guardians of the toddlers) prior to their inclusion in the study.

Results

Frequency Distribution of Respondent Characteristics

Frequency Distribution of Respondent Characteristics in the Working Area of Wonosamodro Primary Health Center

Table 1 Frequency Distribution Based on Mother and Toddler Characteristics

No	Characteristics	(Stunting)	(Non- Stunting)	Total
A	Maternal Characteristics			
1	Mother's Age			
	Healthy Reproductive Age (20 - 35 years)	30	51	81
	High-Risk Age (<20 dan > 35 years)	4	7	11
2	Maternal Education			
	Basic Education (SD & SMP)	26	20	46
	Secondary Education (SMA/SMK)	8	33	41
	Higher Education (D3 Keatas/S1)	0	5	5
B	Toddler Characteristics			
1	Gender			
	Male	21	31	52
	Female	13	27	40



2	Toddler's Age			
	24 - 35 months	17	25	42
	36 - 47 months	11	22	33
	49 - 59 months	6	11	17
	Total	34	58	92

Source: Primary Data, 2026

Based on Table 1 regarding the frequency distribution of mother and toddler characteristics, it can be described that out of a total of 92 toddlers studied, the majority were male, totaling 52 toddlers (56.5%). In terms of age group, most toddlers were in the 25–36 months range, accounting for 42 toddlers (40.5%). Regarding maternal characteristics, the data shows that the majority of mothers had a secondary education level (Senior High School/Vocational High School), totaling 41 respondents (44.6%), followed by basic education (Junior High School/MTs) with 36 respondents (39.1%). Furthermore, in terms of maternal age, the majority of respondents were in the healthy reproductive age group of 20–35 years, totaling 81 respondents (88.0%).

Tabel 2 Frequency Distribution of Knowledge, Parenting Practices, and Stunting

No	Variable	Frequency (n)	Percentage (%)
1	Maternal Knowledge		
	Poor	24	26,1
	Fair	14	15,2
	Good	54	58,7
2	Parenting Practices		
	Lack	44	47,8
	Good	48	52,2
3	Stunting		
	Stunting	34	37,0
	Non- Stunting	58	63,0
	Total	92	100,0

Source: Primary Data, 2026

Based on Table 2 regarding the frequency distribution of the studied variables, it can be illustrated that the incidence of stunting among toddlers in this study shows that out of 92 toddlers, 34 toddlers (37.0%) fell into category 1 (Stunted) and 58 toddlers (63.0%) fell into category 2 (Non-stunted). The research results for the independent variables show that most mothers have a level of knowledge in the good category, totaling 54 respondents (58.7%), while mothers with poor knowledge account for 24 respondents (26.1%) and fair knowledge account for 14 respondents (15.2%). Furthermore, regarding the parenting style variable, the majority of

mothers apply a good parenting style, totaling 48 respondents (52.2%), while mothers who apply a parenting style in the poor category account for 44 respondents (47.8%).

The Correlation Between Maternal Knowledge and the Incidence of Stunting Among Toddlers in the Working Area of Wonosamodro Primary Health Center

Tabel 3. The Correlation Between Maternal Knowledge and the Incidence of Stunting Among Toddlers in the Working Area of Wonosamodro Primary Health Center

Variable	1 (<i>Stunting</i>)	2 (<i>Non- Stunting</i>)	Total	p-value
Maternal Knowledge				0,000
Poor	22	2	24	
Fair	5	9	14	
Good	7	47	54	
Total	34	58	92	

Source: Primary Data, 2026

Based on Table 3 regarding the Correlation between maternal knowledge and the incidence of stunting among toddlers, it is illustrated that the majority of toddlers with stunted status tend to have mothers with a poor level of knowledge, totaling 22 toddlers (91.7%), compared to stunted toddlers whose mothers have a good level of knowledge, totaling 7 toddlers (13.0%).

Conversely, toddlers who are non-stunted tend to have mothers with a good level of knowledge, totaling 47 toddlers (87.0%), compared to non-stunted toddlers whose mothers have a poor level of knowledge, totaling 2 toddlers (8.3%). The results of the statistical test using Chi-Square obtained a p-value < 0.05, which indicates that there is a statistically significant Correlation between the level of maternal knowledge and the incidence of stunting

The Correlation Between Parenting Style and the Incidence of Stunting in the Working Area of Wonosamodro Primary Health Center

Tabel 4. The Correlation Between Parenting Style and the Incidence of Stunting in the Working Area of Wonosamodro Primary Health Center

Variable	stunting	Non- stunting	Total	p-value
Parenting style				0,000
- Poor	26 (59,1%)	18 (40,9%)	44 (100%)	
- Good	8 (16,7%)	40 (83,3%)	48 (100%)	
Total	34 (37,0%)	58 (63,0%)	92 (100%)	

Source: Primary Data, 2026

Based on Table 4 regarding the Correlation between parenting style and the incidence of stunting, it is illustrated that out of a total of 44 toddlers with poor parenting styles, the majority experienced stunting, totaling 26 toddlers (59.1%). Conversely, out of 48 toddlers with good



parenting styles, most were non-stunted, totaling 40 toddlers (83.3%). The results of the statistical test using Pearson Chi-Square showed a p-value of $0.000 < 0.05$, which proves that there is a statistically significant Correlation between maternal parenting style and the incidence of stunting among toddlers at the research site. This indicates that appropriate parenting, including feeding practices and healthcare, is a very important determining factor in reducing the incidence of stunting in toddlers.

Discussion

1. Maternal Knowledge of Stunting in the Working Area of Wonosamodro Primary Health Center

Based on the descriptive univariate results, it is shown that out of 92 respondents in the working area of Wonosamodro Primary Health Center, Boyolali Regency, the majority of mothers of toddlers aged 24–59 months have a level of knowledge in the "Good" category, totaling 54 people (58.7%). Nevertheless, there are still mothers with "Poor" knowledge totaling 24 people (26.1%) and the "Fair" category totaling 14 people (15.2%). The researcher assumes that many mothers still have minimal knowledge about stunting, as it was found that some parents do not know the definition of stunting. Maternal knowledge is a dominant factor that significantly influences the incidence of stunting in various regions, where limited information hinders the mother's ability to detect early symptoms of growth failure (Pertiwi & Hendrati, 2023). A deficiency of maternal knowledge is often related to the level of education, as education typically serves as a gateway to broadening one's horizons. Although highly educated mothers tend to have more extensive knowledge, a low level of education does not necessarily mean that a mother is completely uninformed (Frisky Karmelia et al., 2023). This study is consistent with the research by Ashar et al. (2025) in Magelang, Central Java, which demonstrates that maternal knowledge is a key factor in the success of stunting management. Good knowledge will establish a mother's commitment to implementing appropriate parenting styles and supporting the government's priority programs in reducing stunting rates. This condition is reinforced by the findings of (Noviana et al., 2024) through Partial Least Squares (PLS) analysis, which shows that knowledge has a direct significant influence on stunting prevention behavior (T-statistic = 2.129). Therefore, even if a mother has a formal educational background, the strengthening of specific information regarding nutrition and parenting styles remains the key to transforming passive behavior into concrete preventive actions. An individual's level of knowledge is often rooted in their educational background. In this context, a mother's education level significantly affects health status and plays a crucial role in encouraging the adoption of healthy behaviors. Furthermore, education shapes maternal attitudes and behaviors regarding the fulfillment of a child's nutritional intake, particularly concerning family consumption habits. Mothers with higher education levels tend to have better literacy in selecting quality food, ensuring that the child's nutritional adequacy is met more optimally.

In conclusion, the researcher emphasizes that although the majority of mothers in the working area of Wonosamodro Primary Health Center possess good knowledge, the existence of the group of mothers with fair and poor knowledge cannot be overlooked. Therefore, strengthening continuous and targeted health literacy particularly through social media-based health education regardless of formal educational backgrounds, is a critical prerequisite to optimizing stunting prevention behaviors at the household level.

2. Parenting Style of Mothers of Toddlers in the Working Area of Wonosamodro Primary Health Center



The frequency distribution of parenting practices shows that out of 92 respondents in the working area of Wonosamodro Primary Health Center, Boyolali Regency, 48 mothers (52.2%) practice good parenting, while 44 mothers (47.8%) demonstrate poor parenting styles. These data indicate that although more than half of the respondents have implemented good parenting, the percentage of mothers with poor parenting remains highly significant, reaching almost half of the total sample. This figure suggests that a substantial proportion of mothers of toddlers aged 24–59 months at the research site have not been optimal in providing care, particularly regarding feeding practices, personal and environmental hygiene (sanitation), and psychosocial stimulation.

The researcher assumes that this high percentage of poor parenting practices is closely related to the double burden faced by mothers, who often have to balance domestic caregiving with agricultural or informal economic activities typical of rural areas. Consequently, the limited time available prevents them from ensuring optimal feeding frequencies or consistently maintaining personal and environmental hygiene.

Interestingly, despite the majority of mothers implementing good parenting, instances of stunted toddlers still occur within this category. This phenomenon highlights that the determinants of stunting are multidimensional. In addition to parenting styles, a toddler's nutritional status is heavily influenced by other external factors, such as a history of recurrent infectious diseases, low access to clean water and proper sanitation, and family economic conditions that limit the sustainable availability of nutritious food within the household. (Yani et al., 2023). Furthermore, research by (Azis et al., 2025) emphasizes that suboptimal parenting behaviors are often influenced by family environmental factors and a lack of social support, which hinder the maximization of stunting prevention practices at the household level.

3. Incidence of Stunting in the Working Area of Wonosamodro Primary Health Center

Based on the research results in the working area of Wonosamodro Primary Health Center, Boyolali Regency, a clear distribution of the incidence of stunting among toddlers aged 24–59 months was obtained. The data collection results indicate a proportion of stunted toddlers that still requires serious attention. This condition reflects the presence of chronic nutritional problems that have persisted over a long period at the research site.

The incidence of stunting in toddlers is a manifestation of cumulative linear growth failure. This is supported by (Azzahra et al., 2024), who explain that stunting is often unrecognized by parents in the early stages and only becomes clinically evident when the child is over 24 months old. The height deficit found among respondents in Wonosamodro is the cumulative result of inadequate nutritional intake or recurrent infectious diseases occurring from the fetal period through the first two years of life.

The researcher assumes that this late recognition by parents in Wonosamodro is primarily driven by the misconception that physical growth variations among children are solely hereditary, rather than indicators of nutritional status. Consequently, many parents only begin to realize the growth deviation when their children interact with peers of the same age in early childhood education or neighborhood settings, making early detection and prevention suboptimal during the critical window of growth.

Furthermore, the high rate of stunting in this age group is closely related to the transition following the end of the golden growth period (the first 1,000 days of life). Toddlers in the 24–59 month age range are at a higher risk of having persistent stunted



nutritional status if immediate parenting interventions and nutritional improvements are not implemented. (Mitra et al., 2025)

4. The Correlation Between Maternal Knowledge and the Incidence of Stunting in the Working Area of Wonosamodro Primary Health Center

Based on Table 3, the results of the statistical data analysis using the Chi-Square test show a p -value of 0.000 (< 0.05), which means there is a significant Correlation between Maternal Knowledge and the Incidence of Stunting in the Working Area of Wonosamodro Primary Health Center. This study is in line with the research conducted by Galuh (2024) in Margomulyo Village, which showed that the Spearman Rank correlation test obtained a p -value of 0.000 (< 0.05). Thus, it can be stated that there is a significant Correlation between maternal knowledge about nutrition and the incidence of stunting in toddlers in Margomulyo Village, Seyegan, Sleman Regency, with a correlation coefficient of 0.692, indicating a strong Correlation. (Galuh et al., 2024)

These results are also consistent with the study by (Suryanegara, 2025), which indicates a highly significant correlation (p -value = 0,000) between knowledge and stunting prevention practices. The findings highlight that mothers with a good level of knowledge are up to 26.6 times more likely ($OR = 26,667$) to implement optimal parenting and stunting prevention practices compared to mothers with poor knowledge. (Suryanegara, 2025)

Maternal knowledge regarding nutrition plays a vital role in improving the health status of toddlers and achieving optimal growth maturity. Such knowledge determines maternal attitudes and behaviors in providing food that meets the child's daily nutritional requirements. If the level of health and nutritional knowledge is poorly distributed or falls into a low category, it will result in a limited maternal ability to prevent the risk of stunting in toddlers. (Wardani et al., 2022) This is also in line with the study by (Syarif & Samrida, 2025), which states that structured education is highly effective in increasing maternal understanding, which directly contributes to the effectiveness of stunting prevention at the family level. (Syarif & Samrida, 2025)

Limited knowledge often makes mothers feel powerless and struggle to cope with practical obstacles when caring for undernourished children. A lack of knowledge impacts not only the physical aspects of food but also the mother's emotional state and self-efficacy in maintaining consistent parenting styles. Thus, strengthening health literacy for mothers becomes the primary foundation for implementing proper feeding practices to ensure toddlers achieve optimal growth according to their age (Talahatu et al., 2025). In this study, the presence of mothers with insufficient knowledge clearly requires structured and sustainable follow-up educational programs. This urgency is aligned with an experimental study conducted by Risky et al. (2025), which demonstrated that health education significantly improves families' understanding of stunting (p -value = 0.000). Through appropriate educational interventions, mothers' knowledge scores have been shown to increase drastically.

Based on these findings, the researcher argues that the implementation of health education in the Wonosamodro area cannot rely solely on conventional, one-way counseling. Instead, health promotion strategies must be innovated through interactive, community-based sessions such as practicing cooking demonstrations for local animal protein sources (Isi Piringku) and utilizing digital media to reach younger or working mothers. Therefore, the routine reinforcement of tailored nutrition education at health posts (Posyandu) and during collaborative home visits is essential to systematically bridge the information gap among mothers with low levels of knowledge.



5. The Correlation Between Parenting Styles and the Incidence of Stunting in the Service Area of the Wonosamodro Primary Health Center

Table 4 shows the results of statistical data analysis using the chi-square test, which revealed a p-value of 0.000 (<0.05), indicating that there is a Correlation between parenting styles and the incidence of stunting. This study is consistent with research conducted by (Gusman, 2024) which showed that among 161 respondents with poor parenting practices, 32 (19.9%) had stunted toddlers, whereas among 119 respondents with good parenting practices, 5 (4.2%) had stunted toddlers. Dari hasil uji statistik dengan *chi-square test* A p-value of 0.000 was obtained, which is smaller than the α value (0.05), indicating a significant association between parenting styles and the occurrence of stunting in infants aged 24–59 months. The odds ratio (OR) was 5.656, meaning respondents with inadequate parenting styles were 5.656 times more likely to have stunted infants compared to those with good parenting styles. The low quality of parenting is caused by mothers' limited knowledge regarding appropriate child-rearing needs. In fact, broad knowledge is a crucial factor shaping maternal behavior, particularly in the practice of feeding toddlers (Gusman et al., 2024).

This study is also consistent with research (Zuraida et al., 2025) which indicates that parenting practices have a significant influence on the incidence of stunting, with a p-value of 0.000. In that study, inappropriate feeding practices such as a lack of dietary diversity and feeding frequencies that are not age appropriate were identified as the primary contributors to poor child nutritional status. Although most mothers have adopted good parenting practices, toddlers with stunting are still found. This is because the occurrence of stunting in toddlers is not merely a reflection of inadequate nutritional intake during growth, but rather the accumulation of health conditions dating back to when the child was in the womb (Sinaga et al., 2025). In addition to parenting practices, the interaction between a mother's nutritional knowledge and her attitudes significantly determines the effectiveness of care; mothers with limited knowledge tend to engage in poor parenting practices, which ultimately increase the cumulative risk of stunting. (Zuraida et al., 2025)

Parenting practices are a highly influential factor in ensuring age-appropriate nutrition to support a child's growth process. This includes a commitment to exclusive breastfeeding for the first 6 months due to the infant's still-developing digestive system, as well as the introduction of complementary foods (MP-ASI) that account for nutritional needs after that age. (Cahyaningrum et al., 2024). Poor maternal care practices carry a high risk of causing stunting in children. However, stunting still occurs even when mothers practice good parenting; this is likely due to other factors that can cause stunting in children, such as environmental health factors like poor sanitation, limited access to clean water, and high rates of infectious diseases (diarrhea, respiratory infections, and parasitic infections), which can hinder nutrient absorption even when children are provided with nutritious food. (Yani et al., 2023) Family economic factors also play a role, as limited income restricts access to a variety of nutritious foods. (Romena et al., 2025); (Zhafira et al., 2024)

Poor parenting practices do contribute to stunting, but consistent improvements in parenting practices offer a significant opportunity to improve a child's condition. This is supported by research (Wilujeng et al., 2025) highlighting that recovery-oriented parenting heavily depends on the mother's behavioral skills, such as consistency in providing supplementary nutrition and regularly monitoring the child's growth and development. These changes in parenting behavior do not occur spontaneously but are driven by the



mother's personal internal motivation as well as social motivational support from the community and health workers. Therefore, strengthening parenting practices at the household level must always be accompanied by psychological support to ensure mothers have the resilience needed to care for stunted toddlers. (Wilujeng et al., 2025)

The results of this study indicate that respondents experiencing stunting were more prevalent among those with suboptimal parenting practices compared to those who practiced good parenting. This is closely linked to mothers' limited understanding of the urgency of balanced nutrition. Additionally, parenting practices that neglect hygiene and health aspects such as failing to wash hands before feeding, not restricting the consumption of unhealthy snacks, and irregular meal schedules are key determinants. Thus, inappropriate parenting practices have been proven to be a factor contributing to stunting among toddlers in the service area of the Wonosamodro Community Health Center.

The researcher emphasizes that suboptimal parenting practices significantly trigger the occurrence of stunting, highlighting that the behavioral dimension plays a critical role in child growth. Suboptimal caregiving in the Wonosamodro area particularly regarding irregular feeding schedules and neglected hygiene acts as a primary trigger for growth failure. However, since stunting is a multi-causal phenomenon that can still be found among mothers with good parenting, health interventions must not solely burden maternal education. Therefore, the researcher concludes that sustainable stunting prevention requires a comprehensive approach that structurally integrates the improvement of maternal caregiving skills with cross-sectoral support, such as upgrading environmental sanitation and ensuring steady household economic access to diverse, nutrient-dense foods.

Conclusion

Based on the results of the research and data analysis conducted, it can be concluded that:

1. There is a significant association between the level of mothers'/parents' knowledge and the incidence of stunting in toddlers (p-value < 0.001).
2. There is a significant association between parenting practices and the incidence of stunting in toddlers (p-value < 0.001).

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