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Maternal Knowledge and Motivation in Preventing Stunting among Toddlers in Semarang or another shorter version

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ABSTRACT:
Background: Stunting is a chronic nutritional problem that remains a serious challenge in Indonesia. This condition impacts physical growth, cognitive development, and the quality of future human resources. Mothers' knowledge and motivation in providing balanced nutrition are crucial factors that can influence the nutritional status of toddlers.
Aims: This study aims to analyze the relationship between maternal knowledge about stunting and motivation to provide balanced nutrition to toddlers aged 7–24 months in the working area of Bangetayu Community Health Center, Semarang City.
Methods: The study used a descriptive, correlative design with a cross-sectional approach. The sample consisted of 115 mothers of toddlers selected using simple random sampling. The instrument was a structured questionnaire covering demographic data, knowledge about stunting, and motivation for providing balanced nutrition. Data analysis was performed using the Spearman Rank test.
Result: The results showed that the majority of respondents had high levels of knowledge (73%) and strong motivation (53.9%). Spearman Rank correlation analysis yielded a coefficient of $r = 0.744$ with $p < 0.05$, indicating a very strong and significant relationship between maternal knowledge about stunting and motivation to provide balanced nutrition to toddlers.
Conclusion: Maternal knowledge has been shown to play a crucial role in increasing motivation to provide balanced nutrition. Comprehensive and ongoing health education needs to be strengthened as a preventative measure to reduce the prevalence of stunting, particularly during a child's first 1,000 days of life.

Keywords: Stunting, Knowledge, Motivation, Balanced Nutrition

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INTRODUCTION

Stunting is a chronic nutritional problem that significantly impacts children's physical growth, cognitive development, and future potential.(Chandra et al., 2021; Leroy & Frongillo, 2019; Puspitaningrum et al., 2023; Vizianti, 2022). Although various intervention programs have been implemented in Indonesia, the prevalence of stunting remains high, highlighting the need for further research on its determinants (Anggraeni et al., 2020; Rahayu et al., 2022; Simamora & Kresnawati, 2021; Tadale et al., 2021). Maternal knowledge has been identified as a critical factor in ensuring balanced nutrition for toddlers, which plays a central role in stunting prevention.

In practice, however, there is still a gap between government efforts and community behavior. Despite campaigns promoting balanced nutrition, many mothers lack a sufficient understanding of this concept or fail to apply it effectively. Preliminary findings from the Bangetayu Community Health Center in Semarang revealed ongoing cases of stunting, despite most mothers reporting adequate knowledge. This situation reflects the discrepancy between available information and actual nutritional practices in daily life.

Since stunting is a national health priority, especially during the first 1,000 days of life, this research is timely and relevant. The Bangetayu Community Health Center was selected because the stunting rate in its service area remains relatively high, making it a strategic location for studying the psychosocial determinants of nutritional behavior.

Academically, this study highlights an underexplored research gap: the relationship between maternal knowledge about stunting and motivation to provide balanced nutrition. Most previous research has focused on nutritional factors and children's health status.(Handayani, 2017; Lei, 2017; Miglioli et al., 2015; Rahayuwati et al., 2019), while maternal motivation as a mediator of nutritional behavior remains under-researched. The novelty of this study is its focus on the interaction between cognitive (knowledge) and psychosocial (motivation) factors in preventing stunting, which has not been adequately explored in earlier research.

The choice of knowledge as the independent variable was based on the role of information and education in shaping mothers' mindsets regarding the importance of balanced nutrition. Meanwhile, motivation was chosen because it is the primary driver determining whether knowledge will be implemented in real-life behavior. The combination of these two variables is expected to explain the persistent discrepancy between mothers' knowledge and their nutritional practices for toddlers.

The purpose of this study was to analyze the relationship between maternal knowledge about stunting and motivation to provide balanced nutrition to toddlers aged 7–24 months in the Bangetayu Community Health Center (Puskesmas) area of Semarang. This research is expected to enrich the body of nursing and public health knowledge, while also providing recommendations for nurses, educational institutions, and the community. The results can serve as a basis for designing more effective educational programs and family-based interventions to prevent stunting from an early age.

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METHOD

Research Design

This study uses a descriptive correlative design with a cross-sectional approach.(Babaei & Haratian, 2020; Sokratis et al., 2017)This design was chosen because it aims to analyze the relationship between the independent variable (knowledge about stunting) and the dependent variable (mother's motivation to provide balanced nutrition) at the same measurement time, without intervention from the researcher.

Participant

The study participants were mothers with toddlers aged 7–24 months who resided in the Bangetayu Community Health Center (Puskesmas) working area in Semarang City. The total number of participants was 115 respondents who met the study's inclusion and exclusion criteria.

Population and the methods of sampling Instrumentation (sample of questions, scoring method, and psychometric properties (validity and reliability))

The population of this study was all mothers with toddlers aged 7–24 months in the Bangetayu Community Health Center working area, totaling 161 people. The research sample was determined using the Slovin formula with a 5% error rate, resulting in a minimum of 115 respondents. The sampling technique used was probability sampling with a simple random sampling method.

The questionnaire instrument was tested for validity and reliability before use. Validity was tested using product-moment correlation, while reliability was assessed using Cronbach's alpha. The test results showed that most items were valid and reliable (alpha value > 0.7), making it suitable for use in data collection.

Instrument

The research instrument is a structured questionnaire consisting of:

- Questionnaire A: Demographic data (mother's age, child's age, highest education, occupation).
- Questionnaire B: Mothers' knowledge about stunting (definition, indicators, causal factors, impacts, and prevention).
- Questionnaire C: Mothers' motivation to provide balanced nutrition to toddlers, arranged on a Likert scale.

Procedures and if relevant, the time frame

The research procedure was carried out in three stages:

- Preparation stage: submitting research permits to the faculty and health center, and preparing instruments.
- Implementation phase: Data collection was conducted from September to December 2024 by distributing questionnaires directly to respondents. Researchers assisted them during the questionnaire filling process to ensure respondents understood.
- Final stage: checking the completeness of the questionnaire, processing, analysis, and drawing conclusions.

Analysis plan

Data were analyzed using univariate and bivariate analysis.(Bertani et al., 2018; Gani & Amalia, 2021)Univariate analysis was used to describe respondent characteristics, knowledge level, and maternal motivation in the form of a frequency distribution. Bivariate analysis was conducted to test the relationship between knowledge about stunting and maternal motivation using the Spearman Rank test. The relationship was declared significant if the p-value <0.05.

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RESULTS AND DISCUSSION

Result

Respondent Characteristics

Table 1.1 Distribution of Respondents Based on Child Age (n = 115)

Child's Age (months)	Frequency	Percentage (%)
7–12	26	22.6
13–17	45	39.1
18–24	44	38.3
Total	115	100

Description: The majority of children are in the age range of 13–17 months, namely 45 children (39.1%).

Table 2.1 Distribution of Respondents Based on Maternal Age (n = 115)

Mother's Age (years)	Frequency	Percentage (%)
19–25	25	20.9
26–35	85	73.9
36–45	6	5.2
Total	115	100

Description: Most respondents were in the 26–35 years age group (73.9%).

Table 3.1 Distribution of Respondents Based on Mother's Last Education (n = 115)

Last education	Frequency	Percentage (%)
Elementary School	4	3.5
JUNIOR HIGH SCHOOL	9	7.8
SENIOR HIGH SCHOOL	86	74.8
Bachelor	16	13.9
Total	115	100

Description: The majority of mothers had a high school education or equivalent (74.8%).

Table 4.1 Distribution of Respondents Based on Mother's Occupation (n = 115)

Work	Frequency	Percentage (%)
Housewife	92	80.0
civil servant	4	3.5
Private	19	16.5
Total	115	100

Description: Most of the respondents work as housewives (80%).

Table 5. Distribution of Toddlers Based on Stunting Category (n = 115)

Category	Frequency	Percentage (%)
Stunting	26	22.6
No Stunting	89	77.4
Total	115	100

Description: Of the 115 toddlers, there were 26 toddlers (22.6%) in the stunting category.

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Table 6. Distribution of Mothers' Knowledge about Stunting (n = 115)

Level of Knowledge	Frequency	Percentage (%)
Low	0	0.0
Currently	31	27.0
Tall	84	73.0
Total	115	100

Description: Most respondents have high knowledge about stunting (73%).

Table 7. Distribution of Mothers' Motivation to Provide Balanced Nutrition (n = 115)

Motivation Level	Frequency	Percentage (%)
Weak	0	0.0
Currently	53	46.1
Strong	62	53.9
Total	115	100

Description: The majority of respondents have strong motivation to provide balanced nutrition to toddlers (53.9%).

Table 8. Relationship between Knowledge about Stunting and Mother's Motivation (n = 115)

Variables	Correlation Value (Spearman's rho)	p-value
Knowledge ↔ Motivation	0.744	< 0.05

The analysis results showed a very strong positive relationship (r = 0.744) between maternal knowledge about stunting and motivation to provide balanced nutrition. A p-value < 0.05 indicates a significant relationship.

Based on the research results, the majority of toddlers were aged 13–17 months (39.1%), while the majority of mothers were aged 26–35 years (73.9%). The majority of respondents were high school graduates (74.8%), and the majority worked as housewives (80%). In terms of nutritional status, 22.6% of toddlers were identified as having stunting.

In terms of knowledge, the majority of mothers had a high level of knowledge about stunting (73%), while their motivation to provide balanced nutrition was also relatively strong (53.9%). The Spearman Rank test showed a very strong positive correlation (r = 0.744) and significant (p < 0.05), indicating that the higher the mothers' knowledge about stunting, the higher their motivation to provide balanced nutrition to their toddlers.

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Discussion

The findings of this study confirm a strong, significant relationship between maternal knowledge of stunting and motivation to provide balanced nutrition. These results align with Green's theory of health behavior, which posits that knowledge is a predisposing factor that shapes motivation and subsequently, behavior (Firdaus et al., 2023; Khoiruman & Harsono, 2023; Maulina et al., 2023). However, it is important to highlight that knowledge alone does not guarantee the absence of stunting in children. In this study, a number of toddlers were still identified as stunted, even though their mothers had relatively high levels of knowledge. Several factors may explain this phenomenon. First, socioeconomic constraints often limit mothers' ability to translate knowledge into practice. For example, financial limitations can hinder access to diverse and nutritious foods, despite awareness of their importance. Second, cultural norms and family influences may affect dietary practices, with mothers sometimes prioritizing convenience or adhering to traditional feeding patterns over recommended nutrition. Third, inconsistent health service utilization, such as irregular visits to integrated health posts (Posyandu), can reduce the effectiveness of nutrition education. These factors suggest that maternal knowledge is necessary but not sufficient, and must be supported by economic, social, and environmental enablers. From a theoretical perspective, this study underscores the importance of combining cognitive and motivational aspects with enabling factors to achieve effective stunting prevention. While motivation tends to rise alongside knowledge, structural barriers may prevent behavioral change, echoing findings from previous research that highlight the complex interaction between psychosocial and contextual determinants of child nutrition (Agustian et al., 2023; Anandita & Gustina, 2022; Mulyani et al., 2022).

In terms of limitations, this research has several points to consider. First, using self-report questionnaires may introduce respondent bias because mothers may provide socially desirable answers instead of accurate reflections of their behavior (Bommer et al., 2020; Maryam et al., 2021; Setiawati et al., 2023; Tette et al., 2015). Second, the study was conducted in the local context of the Bangetayu Community Health Center in Semarang, which may have unique socioeconomic and cultural conditions that limit external validity. Third, the cross-sectional design restricts the ability to establish causal relationships, as it only captures associations at a single point in time. Consequently, generalization of the results to broader populations with diverse characteristics should be approached cautiously.

However, this study is not without limitations. The cross-sectional design can only describe the relationship between variables at a specific point in time, thus failing to explain causality. Furthermore, the use of a self-report questionnaire has the potential to introduce social bias, as respondents may provide answers perceived as more favorable than the actual results. The study was also conducted in only one work area, the Bangetayu Community Health Center in Semarang, so the results cannot be generalized to a broader population with varying socioeconomic characteristics.

Based on these limitations, further research is recommended to use a longitudinal or experimental design to more deeply explain the causal relationship between maternal knowledge and motivation. Furthermore, similar research should be expanded to other regions to obtain a more representative picture. From a practical perspective, the results of this study encourage health workers to improve nutrition education strategies through mother-to-toddler classes, social media-based health campaigns, and family support at integrated health posts (Posyandu). With a more comprehensive approach, it is hoped that maternal knowledge can continue to improve, thus strengthening motivation to provide balanced nutrition and reducing the prevalence of stunting in Indonesia.

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CONCLUSION

This study demonstrates a strong and significant relationship between maternal knowledge about stunting and their motivation to provide balanced nutrition to toddlers aged 7–24 months in the Bangetayu Community Health Center (Puskesmas) in Semarang City. The greater the mothers' knowledge about stunting, the greater their motivation to provide balanced nutrition, which ultimately plays a crucial role in stunting prevention efforts during the First 1,000 Days of Life (HPK).

These findings confirm that stunting prevention interventions require not only medical support but also psychosocial strengthening through comprehensive nutrition education. By improving mothers' knowledge and motivation, it is hoped that balanced nutrition practices will be optimized, thereby reducing stunting rates and improving the health of future generations.

AUTHOR CONTRIBUTION STATEMENT

IRI contributed to the research concept, data collection, and manuscript writing. IA supervised the methodology, conducted data analysis, and critically reviewed the article's content. Both authors jointly approved the final manuscript for publication.

DOI:

REFERENCES

Agustian, D., Triyanto, SA, Apriyani, D., & Helbawanti, O. (2023). Household Stunting Prevention Strategies to Support Sustainable Development in Tasikmalaya City. DEDIKASI: Community Service Reports, 5(1). https://doi.org/10.20961/dedikasi.v5i1.69811

Anandita, MYR, & Gustina, I. (2022). Stunting Prevention During the Golden Age Period Through Increasing Education on the Importance of Complementary Foods. Al Ghafur: Scientific Journal of Community Service, 1(2), 79–86. https://doi.org/10.47647/alghafur.v1i2.917

Anggraeni, PS, Munawaroh, M., & Ciptiasrini, U. (2020). The Relationship between Knowledge, Attitudes, and Community Health Center Facilities regarding Balanced Nutrition and Toddler Nutritional Fulfillment Behavior. Indonesian Midwifery Journal, 10(04), 188–195. https://doi.org/10.33221/jiki.v10i04.815

Babaei, S., & Haratian, M. (2020). Compassion satisfaction and fatigue in cardiovascular nurses: A cross-sectional descriptive study. Iranian Journal of Nursing and Midwifery Research, 25(3), 212. https://doi.org/10.4103/ijnmr.IJNMR_112_19

Bertani, A., Di Paola, G., Russo, E., & Tuzzolino, F. (2018). How to describe bivariate data. Journal of Thoracic Disease, 10(2), 1133–1137. https://doi.org/10.21037/jtd.2018.01.134

Bommer, C., Mittal, N., & Vollmer, S. (2020). The Impact of Nutritional Interventions on Child Health and Cognitive Development. Annual Review of Resource Economics, 12(Volume 12, 2020), 345–366. https://doi.org/10.1146/annurev-resource-110519-093256

Chandra, BR, Darwis, RS, & Humaedi, S. (2021). The Role of Family Welfare Empowerment (Pkk) in Stunting Prevention. Focus: Journal of Social Work, 4(2), 107–123. https://doi.org/10.24198/focus.v4i2.35060

Firdaus, AR, Saraswati, D., & Gustaman, RA (2023). Qualitative Analysis of Factors of Adolescents' Premarital Sexual Behavior Based on Lawrence Green's Behavioral Theory (Case Study in the Cilembang Community Health Center Work Area, Tasikmalaya City). Indonesian Journal of Community Health, 19(2), 75–92. https://doi.org/10.37058/jkki.v19i2.8638

Gani, I., & Amalia, S. (2021). Data Analysis Tools: Statistical Applications for Field Research. Andi Publisher.

Handayani, R. (2017). Factors Associated with Nutritional Status in Toddlers. Endurance Journal, 2(2), 217. https://doi.org/10.22216/jen.v2i2.1742

Khoiruman, Muh., & Harsono, M. (2023). Expansion of the Theory of Planned Behavior in Green Behavior Research. ProBank, 8(1), 10–26. https://doi.org/10.36587/probank.v8i1.1448

Lei, L. (2017). The impact of community context on children's health and nutritional status in China. Social Science & Medicine, 179, 172–181. https://doi.org/10.1016/j.socscimed.2017.02.028

Leroy, J. L., & Frongillo, E. A. (2019). Perspective: What Does Stunting Really Mean? A Critical Review of the Evidence. Advances in Nutrition, 10(2), 196–204. https://doi.org/10.1093/advances/nmy101

Maryam, H., Isnanto, I., & Mahirawatie, IC (2021). Determinants Of Nutritional Status In The Dental Health Status Of School Age Children: Systematic Literature Review. JDHT Journal of Dental Hygiene and Therapy, 2(2), 62–71. https://doi.org/10.36082/jdht.v2i2.336

Maulina, A., Rahmawati, NF, & Patria, YM (2023). Practice of Environmentally Friendly Consumer Behavior Model from the Perspective of Planned Behavior Theory. Journal of Secretary & Business Administration (JSAB), 7(1), 91. https://doi.org/10.31104/jsab.v7i1.280

DOI:

Miglioli, TC, Fonseca, VM, Gomes, SC, Silva, KS da, Lira, PIC de, & Batista, M. (2015). Factors associated with the nutritional status of children less than 5 years of age. Revista de Saúde Pública, 49, 1–9. https://doi.org/10.1590/S0034-8910.2015049005441

Mulyani, NS, Fitriyaningsih, E., Rahmad, AHA, & Hadi, A. (2022). Improving Mothers' Knowledge and Attitudes for Stunting Prevention in Aceh Besar District. 4.

Puspitaningrum, DA, Hikmah, K., & Nur, MMA (2023). Stunting: Phenomenon, Reality, Solutions. Deepublish.

Rahayu, LS, Suraya, I., & Maulida, NS (2022). Education and Practice of Fulfilling Balanced Nutrition for Pregnant Women. Shihatuna: Journal of Community Health Service, 2(1), 7–11. https://doi.org/10.30829/shihatuna.v2i1.11175

Rahayuwati, L., Nurhidayah, I., Oktavia Hidayati, N., Hendrawati, S., & Ekawati, R. (2019). Analysis of Factors Affecting Nutrition Status in Children. http://localhost:8080/xmlui/handle/123456789/358

Setiawati, A., Arda, D., Nordianiwati, N., Tyarini, IA, & Indryani, I. (2023). Factors associated with nutritional status in children under five. Journal of Health Scientific Education, 1(3), 99–106. https://doi.org/10.61099/junedik.v1i3.24

Simamora, RS, & Kresnawati, P. (2021). Fulfilling Balanced Nutritional Diet Patterns in Handling Stunting in Toddlers in the Rawalumbu District Community Health Center Area, Bekasi. Journal of Health Sciences, 11(1), 34–45. https://doi.org/10.52643/jbik.v11i1.1345

Sokratis, S., Christos, Z., Despo, P., & Maria, K. (2017). Prevalence of depressive symptoms among schoolchildren in Cyprus: A cross-sectional descriptive correlational study. Child and Adolescent Psychiatry and Mental Health, 11(1), 7. https://doi.org/10.1186/s13034-017-0145-8

Tadale, D.L., Ramadhan, K., & Nurfatimah, N. (2021). Improving Mothers' Knowledge of Balanced Nutrition for Toddlers to Prevent Stunting Through Counseling. Community Empowerment, 6(1), 48–53. https://doi.org/10.31603/ce.4379

Tette, EMA, Sifah, EK, & Nartey, E.T. (2015). Factors affecting malnutrition in children and the uptake of interventions to prevent the condition. BMC Pediatrics, 15(1), 189. https://doi.org/10.1186/s12887-015-0496-3

Vizianti, L. (2022). The Role and Function of Integrated Service Posts (Posyandu) in Preventing Stunting in Medan City. Warta Dharmawangsa, 16(3), 563–580. https://doi.org/10.46576/wdw.v16i3.2248

DOI: