

Original Research

Determinants of Mothers' Motivation in Preventing Malnutrition in Toddlers: A Cross-Sectional Study

Istiana Kusumastuti^{1*}, Sobar Sobar², Nurul Dwi Octaviani³

^{1,2,3} Faculty of Health Sciences, Universitas Indonesia Maju, Indonesia

ABSTRACT

Background: Malnutrition in children under five remains a persistent public health problem in Indonesia, influenced by various multidimensional factors. Maternal knowledge, perception, and both health worker and family support play critical roles in determining mothers' motivation to prevent malnutrition. This study aimed to analyze the determinants influencing maternal motivation in preventing malnutrition among children under five.

Methods: This quantitative cross-sectional study involved 93 mothers of children under five in the working area of Sukaesmi Health Center, Cianjur. Respondents were selected using a purposive sampling technique based on predefined inclusion criteria. Data were collected using a structured questionnaire and analyzed using multiple linear regression with SPSS software.

Results: The findings revealed that maternal motivation was significantly influenced by knowledge ($p = 0.007$), perception ($p = 0.016$), health worker support ($p = 0.048$), and family support ($p = 0.044$). These four factors collectively explained 72.3% of the variance in maternal motivation to prevent malnutrition.

Conclusion: Strengthening maternal capacity through health education, improving the quality of health services, and fostering supportive family environments are essential strategies to enhance maternal motivation and reduce malnutrition rates among children under five. The study underscores the need for comprehensive, family-centered, community-based interventions to address the multifactorial nature of child malnutrition.

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CONTACT

Istiana Kusumastuti



istianaku31@gmail.com

Faculty of Health Sciences,
Universitas Indonesia Maju. Jl.
Harapan No. 50, RT. 2/RW. 7,
Lenteng Agung, Jagakarsa District,
South Jakarta City, Special Capital
Region of Jakarta 12610 Indonesia.



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INTRODUCTION

Malnutrition among children under five remains a major public health challenge in many countries, including Indonesia. According to the latest report, the prevalence of severe malnutrition among children under five in Indonesia is 3.9%, while the prevalence of moderate malnutrition reaches 13.8%, indicating the need for greater efforts in prevention and management of nutritional problems. These data reflect the impact of

malnutrition that not only affects children's physical growth but also has long-term consequences on their cognitive and social development (Susian & Sutarno, 2025).

Malnutrition among children under five also remains a serious issue within Indonesia's health sector, particularly in the Cianjur region. Based on the Indonesian Nutritional Status Survey (SSGI), the prevalence of stunting in Cianjur Regency is recorded at 24.5%, which is still above the threshold set by the World Health Organization (WHO) of 20%. The high prevalence of stunting highlights the urgent need for greater attention to children's nutritional status in the area, especially regarding dietary patterns, disease history, and environmental risk exposures such as cigarette smoke (HM et al., 2024).

Stunting, as a form of chronic malnutrition, continues to draw significant concern. Indonesia is recorded as the country with the third-highest stunting prevalence in Southeast Asia. Stunting is closely linked to sanitation, parenting practices, and access to nutritious food (Yang et al., 2025). Moreover, family involvement plays a crucial role in supporting healthy eating behaviors. A lack of family support may weaken mothers' motivation to effectively prevent malnutrition (Hayati & Suesti, 2025).

Poverty is also a significant factor influencing the prevalence of malnutrition. High poverty rates are one of the main causes of limited access to nutritious food, thereby increasing the risk of malnutrition among children under five (Kementerian Kesehatan Republik Indonesia, 2019). This condition indicates that interventions should not only focus on medical aspects but also integrate broader social, economic, and educational dimensions.

This study offers novelty by integrating maternal knowledge, nutritional perception, and the role of health workers into a single analytical framework to explain mothers' motivation in preventing malnutrition among toddlers. Unlike prior studies that often analyzed these factors separately or focused mainly on nutritional status outcomes (e.g., stunting or wasting), this research emphasizes maternal motivation as a critical behavioral determinant mediating preventive actions against malnutrition (Refisiliyani & Merben, 2025; Haryanti et al., 2024). Additionally, this study fills a gap by providing context-specific evidence from a primary health-care setting in Indonesia, where sociocultural conditions, health-service access, and family dynamics collectively shape maternal behavior.

By employing multivariate analysis, the study draws new empirical insights into the relative influence of cognitive, perceptual, and institutional factors on maternal motivation. These findings can guide more targeted, behavior-oriented nutrition intervention strategies tailored to local contexts, beyond generic efforts solely on status improvement. Therefore, this study aims to analyze the influence of maternal knowledge, perception, health worker support, and family support on maternal motivation in preventing malnutrition among children under five.

Based on previous theories and findings, the hypothesis developed in this study is that there is a significant relationship between knowledge, perception, health worker support, and family support with maternal motivation in preventing malnutrition among children under five.

MATERIALS AND METHOD

This study employed a quantitative approach with a cross-sectional design, in which data were collected at a single point in time to determine the relationship between independent and dependent variables. The aim of the study was to analyze the influence of knowledge, perception, the role of health workers, and family support on maternal motivation in preventing malnutrition among children under five. The research was conducted within the working area of Sukaresmi Health Center, Cianjur Regency, West Java Province.

The study population consisted of mothers who had children aged 1–5 years and resided permanently in the study area. The sample size of 93 respondents was determined based on the rule of thumb for multivariate analysis, which recommends a minimum of 5–10 respondents for each independent variable included in the regression model. Given the number of predictor variables examined in this study, a sample size of 93 was considered adequate to ensure statistical power and stability of the regression estimates. This approach is widely applied in public health and behavioral research when precise population variance estimates are unavailable.

Respondents were selected using a simple random sampling technique to provide equal selection probability for all eligible mothers listed in the sampling frame. Inclusion criteria were mothers who: (1) had children aged 1–5 years, resided in the Sukaresmi Health Center working area for at least six months; (2) were able to communicate effectively and provide informed consent; and (3) were willing to participate in the study. Exclusion criteria included mothers who: (1) were not present during the data collection period; and (2) had cognitive or communication limitations that could interfere with questionnaire completion or submitted incomplete questionnaire responses.

Data were collected using a structured questionnaire developed based on behavioral and health promotion theories relevant to maternal motivation and child nutrition. The questionnaire consisted of several domains, including: maternal knowledge, covering understanding of child nutrition, balanced diets, feeding practices, and prevention of nutrition-related diseases; perception of nutrition, assessing mothers' beliefs regarding the importance of nutrition for child growth and development; role of health workers, evaluating exposure to counseling, education, and support received from health professionals; maternal motivation, measuring the willingness, commitment, and intention of mothers to engage in behaviors that prevent malnutrition.

Each domain was designed to capture cognitive, perceptual, and institutional factors influencing maternal motivation. Content validity was assessed through expert judgment involving public health and nutrition specialists to ensure relevance, clarity, and appropriateness of each item. Construct validity was evaluated using item–total correlation analysis, with items considered valid if correlation coefficients exceeded the accepted threshold. Reliability testing was conducted using Cronbach's alpha, with all questionnaire domains demonstrating acceptable internal consistency ($\alpha \geq 0.70$), indicating that the instrument was reliable for measuring the intended constructs.

Responses were measured using a Likert scale, ranging from low to high agreement or frequency, depending on the domain assessed. Scores for each domain were summed and transformed into composite variables for statistical analysis. Higher scores reflected higher levels of knowledge, positive perception, stronger health worker support, and greater maternal motivation in preventing malnutrition.

In this study, maternal motivation in preventing malnutrition among toddlers was defined as the dependent variable. The independent variables included: maternal

knowledge related to child nutrition and malnutrition prevention, maternal perception of the importance of nutrition, the role of health workers in providing nutrition-related education and support, and family support related to child feeding and care practices.

All variables were measured quantitatively using a structured questionnaire and operationalized into composite scores for statistical analysis. Data collection was conducted after obtaining ethical clearance and permission from the local health authorities. A list of eligible respondents was obtained from the Sukaresmi Health Center records. Respondents were selected using a simple random sampling technique.

Data were collected through face-to-face interviews using a structured questionnaire administered by trained data collectors. Prior to data collection, respondents were informed about the study objectives, procedures, potential benefits, and their rights as participants. Written informed consent was obtained from all respondents before participation. Completed questionnaires were checked daily to ensure completeness and data quality.

Data analysis was conducted in several stages. First, univariate analysis was performed to describe the frequency distribution and central tendencies of respondents' characteristics and study variables. Second, bivariate analysis was conducted using the Chi-Square test and Spearman correlation test to examine the relationships between each independent variable and maternal motivation.

Finally, multivariate analysis was carried out using multiple linear regression to identify the most influential factors affecting maternal motivation in preventing malnutrition among toddlers. Statistical analyses were performed using SPSS version 25, with a significance level set at $p < 0.05$.

This study received ethical approval from the Komisi Etik Penelitian Kesehatan Universitas Indonesia Maju, with the reference number: 2011/Sket/Ka-Dept/RE/UIMA/VI/2025. All participants provided informed consent prior to data collection, and participant confidentiality and anonymity were strictly maintained throughout the study. This study was conducted in accordance with research ethics principles, namely respect for persons, beneficence, and justice.

RESULTS

Univariate Analysis

Table 1 presents the frequency distribution of respondents' characteristics, including maternal age, education level, occupation, and the age of under-five children.

Table 1. Characteristics of Research Respondents Based on Mother's Age, Education, Occupation, and Child's Age (n = 93)

	Characteristics	n	%
Mother's Age	21–30 years	30	32.3
	31–40 years	41	44.1
	41–50 years	20	21.5
	51–60 years	2	2.1
Mother's Education	Elementary School	8	8.5
	Junior High School	14	15.1
	Senior High School/Vocational	35	37.6
	Diploma (D3)	14	15.1
	Bachelor's Degree (S1)	22	23.7

	Characteristics	n	%
Mother's Occupation	Housewife	61	65.6
	Civil Servant	9	9.7
	Entrepreneur	6	6.5
	Others	17	18.3
Child's Age	1 year	28	30.1
	2 year	13	14.0
	3 year	19	20.4
	4 year	16	17.2
	5 year	17	18.3

Note: n = number of observations; % = percentage

The results show that the majority of respondents were aged 31–40 years (44.1%), followed by those aged 21–30 years (32.3%). This indicates that most participating mothers were in their productive years and likely to be the primary caregivers for their children. At this age, mothers are typically more receptive to information and capable of implementing effective malnutrition prevention practices.

Table 2. Descriptive Statistics of Respondents' Scores (n = 93)

Variable	Mean	Median	Range	Min	Max	Std. Deviasi
Maternal Knowledge	10.72	11.00	10.00	2.00	12.00	1.67
Perception	55.18	54.00	27.00	43.00	70.00	6.30
Health Worker Role	62.48	64.00	58.00	17.00	75.00	12.73
Family Support	63.26	64.00	33.00	42.00	75.00	8.63
Motivation to Prevent Malnutrition	68.24	70.00	20.00	55.00	75.00	6.21

The descriptive statistics indicate that maternal motivation to prevent malnutrition is generally high and supported by four main factors: knowledge, perception, the role of health workers, and family support. All variables showed relatively high average values, although there was some variation in individual perceptions and experiences regarding health worker involvement.

Bivariate Analysis

Table 3. Correlation Analysis between Variables (n = 93)

Variables	P-value	Nilai r	Direction of Relationship
Maternal Knowledge – Motivation	0.001	0.334	Positive Linear
Perception – Motivation	0.003	0.302	Positive Linear
Health Worker Role – Motivation	0.049	0.205	Positive Linear
Family Support – Motivation	0.003	0.303	Positive Linear

Overall, all four independent variable maternal knowledge, perception, the role of health workers, and family support—showed significant and positive correlations with maternal motivation in preventing malnutrition among under-five children. These findings suggest that efforts to enhance maternal motivation should adopt a

multidimensional approach that strengthens knowledge, fosters positive perceptions, promotes active engagement of health workers, and encourages strong family involvement. An integrated intervention strategy encompassing these factors could effectively reduce the prevalence of malnutrition among children under five.

Multivariate Analysis

This analysis aimed to determine the extent to which the independent variables—maternal knowledge, perception, the role of health workers, and family support—affect the dependent variable, namely maternal motivation in preventing malnutrition.

T-Test (Partial Test)

Table 4. Multiple Linear Regression Results (n = 93)

Model	B	t	p-value
(Constant)	5.325	5.270	<0.001
Maternal Knowledge	1.015	3.752	0.007
Perception	0.243	3.467	0.016
Health Worker Role	0.103	2.559	0.048
Family Support	0.109	2.775	0.044

Maternal Knowledge: $p = 0.007 < 0.05$ indicates a significant positive effect. Thus, maternal knowledge significantly influences motivation in preventing malnutrition. Perception: $p = 0.016 < 0.05$ shows a significant positive effect. Mothers with positive perceptions are more motivated to prevent malnutrition. Health Worker Role: $p = 0.048 < 0.05$ indicates a significant positive influence, suggesting that health worker involvement enhances maternal motivation. Family Support: $p = 0.044 < 0.05$ also shows a significant positive effect, emphasizing the importance of family encouragement.

F-Test Results

The F-test evaluates whether all independent variables collectively influence the dependent variable.

Table 5. ANOVA (F-Test) Results (n = 93)

Model	df	F	Sig.
Regression	4		
Residual	88	6.320	<0.001
Total	92		

The simultaneous F-test result ($p = 0.001 < 0.05$) indicates that all independent variables—maternal knowledge, perception, health worker role, and family support—jointly have a significant effect on maternal motivation in preventing malnutrition among children under five.

Coefficient of Determination (R^2)

Table 6. R-Square Value (n = 93)

Model	R Square
1	0.723

The R^2 value of 0.723 indicates that 72.3% of the variation in maternal motivation to prevent malnutrition is explained by maternal knowledge, perception, health worker

role, and family support. The remaining 27.7% is influenced by other variables not included in this study model.

DISCUSSION

Based on the results of the regression analysis, the coefficient of determination (R Square) was found to be 0.723, indicating that 72.3% of the variation in maternal motivation to prevent malnutrition among children under five can be explained by four independent variables: maternal knowledge, perception, health worker role, and family support. Meanwhile, the remaining 27.7% is explained by other factors outside the model that were not examined in this study. These findings suggest that the four variables play a crucial role in fostering maternal motivation to actively engage in malnutrition prevention efforts for young children.

This result aligns with a recent study by Rahayu and Firmansyah (2024) which demonstrated a positive and significant relationship between maternal knowledge levels and child nutrition practices. Adequate knowledge enables mothers to understand the importance of balanced nutrition, recognize signs of malnutrition, and apply proper preventive measures. Similarly, Tyas Anggari Nengsi et al., (2025) found a positive and significant correlation between maternal knowledge and infant and young child feeding (IYCF) practices in the Bangetayu Wetan Posyandu area. The study reported that 97% of mothers had good feeding practices, with a statistically significant correlation between knowledge and practice ($r = 0.229$; $p < 0.05$) (Nengsi et al., 2025).

In addition to knowledge, mothers' perception of malnutrition also emerged as a significant factor. An accurate understanding of malnutrition risks and consequences influences awareness and attitudes toward prevention (Rima Irwinda, 2023). A qualitative study by Uwiringiyimana et al. (2024) in Rwanda revealed that although many mothers were aware of malnutrition, a limited understanding of its causes and impacts led to low engagement in preventive efforts (Suraya et al., 2024). Hence, perception shaped by experience and information plays an essential role in developing motivation (Fitra, 2023).

The role of health workers was also shown to significantly influence maternal motivation. Health workers play a strategic role in providing counseling, nutrition education, and continuous support, as well as in building trust with mothers as key actors in child nutrition programs. Effective communication and regular interaction between health workers and mothers have been shown to strengthen motivation and encourage positive behavioral changes related to malnutrition prevention (Kementrian Kesehatan RI, 2021). Research by Zhang et al. found that access to maternal and child health services significantly improved mothers' knowledge and skills in nutrition practices, although behavioral changes did not always occur without strong social support (Fauzan, 2021).

Family support, particularly from husbands and other family members, was found to strengthen maternal motivation. This support extends beyond financial aspects to emotional and practical assistance, such as allowing mothers to attend health counseling sessions or helping to meet children's nutritional needs (Yuyun Triwisnanti, 2025). Arifin, (2024) emphasized that mothers who receive family support tend to be more consistent in implementing recommended child feeding practices (Banowo & Hidayat, 2021).

Meanwhile, the remaining 27.7% of unexplained variance may be attributed to external factors such as socioeconomic status, education level, local cultural norms, access to nutritious food, and environmental sanitation. A study by Cahyaningrum et al., (2023) highlighted that economic limitations and cultural myths act as major barriers to

implementing balanced nutrition practices across various regions in Indonesia (Rahayu & Eko, 2024). This study highlights the importance of behavior-oriented nutrition interventions that strengthen maternal motivation. Malnutrition prevention programs should integrate effective health worker counseling, improve maternal perceptions of nutrition, and involve family support to encourage sustained preventive behaviors.

The cross-sectional design limits causal inference, and the use of self-reported questionnaires may introduce recall and social desirability bias. In addition, the study setting was limited to one primary health-care area, which may restrict the generalizability of the findings. Future research should apply longitudinal or mixed-methods designs and involve larger, multi-site samples to improve causal interpretation and external validity. The inclusion of qualitative approaches and objective nutritional indicators is also recommended to strengthen methodological rigor.

CONCLUSION

This study revealed that maternal motivation to prevent malnutrition among children under five in the Sukaresmi Health Center working area was generally high. This motivation was influenced by four interrelated key factors—knowledge, perception, the role of health workers, and family support. Adequate maternal knowledge served as the fundamental basis for making informed decisions regarding child nutrition. A positive perception encouraged mothers to take proactive actions in preventive efforts. The role of health workers, although perceived differently by respondents, still made a significant contribution to improving maternal awareness and understanding. Meanwhile, family support proved to be a strong reinforcing factor for mothers in maintaining optimal nutritional practices. Collectively, these four factors created an enabling environment that supports mothers in maintaining their children's nutritional status.

It is recommended that health workers in the Sukaresmi Health Center area further optimize educational and communicative approaches when providing nutritional counseling to mothers of young children. Strengthening interactive and continuous education efforts can help enhance maternal motivation and active participation in sustainable malnutrition prevention programs.

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CONFLICT OF INTERESTS

The author declares that there is no conflict of interest in this research.

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