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Family Health Tasks and Their Relationship with Childhood Stunting in Primary Healthcare Settings in Indonesia

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ABSTRACT

Introduction: Childhood stunting remains a major public health challenge in Indonesia, particularly at the primary care level. Family involvement plays a crucial role in child growth, yet empirical evidence on the relationship between family health tasks and stunting is limited. This study aimed to examine the association between family health tasks and childhood stunting in primary care settings in Indonesia.

Methods: A quantitative analytical cross-sectional study was conducted among 60 families with children aged 6–59 months attending selected primary healthcare centers. Family health tasks were assessed using a structured questionnaire covering health problem recognition, decision-making, caregiving, home environment management, and healthcare utilization. Childhood stunting was determined using height-for-age z-scores based on World Health Organization growth standards. Data were analyzed using descriptive statistics and chi-square tests.

Results: The prevalence of childhood stunting was 40.0%. More than half of the families demonstrated inadequate performance of family health tasks. A statistically significant association was found between family health tasks and childhood stunting, with higher stunting prevalence among children from families with inadequate task performance ($p < 0.05$).

Conclusion: Inadequate family health task performance is associated with an increased risk of childhood stunting. Strengthening family capacity to perform essential health tasks through family-centered interventions in primary care may contribute to more effective stunting prevention strategies in Indonesia.

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INTRODUCTION

Childhood stunting remains one of the most persistent public health challenges globally, particularly in low- and middle-income countries. Stunting, defined as a height-for-age z-score below minus two standard deviations of the World Health Organization growth standards, reflects chronic undernutrition during the most critical periods of growth and development (Abate *et al.*, 2024). Beyond its physical manifestation, stunting is associated with long-term consequences, including impaired cognitive development, reduced educational attainment, increased susceptibility to chronic diseases, and diminished economic productivity in adulthood (Arqam *et al.*, 2026). Despite global commitments to reduce stunting through the Sustainable Development Goals, progress remains uneven, with substantial disparities across and within countries (Bhattacharjee *et al.*, 2026).

Indonesia is among the countries facing a high burden of childhood stunting. Although national prevalence has declined in recent years, stunting continues to affect a significant proportion of children under five, particularly in rural areas and socioeconomically disadvantaged communities (Bos *et al.*, 2024). The multifactorial nature of stunting in Indonesia encompasses inadequate dietary intake, recurrent infections, poor sanitation, limited access to quality health services, and suboptimal caregiving practices (Cabal-Herrera *et al.*, 2025). These determinants interact across individual, household, and health system levels, underscoring the need for integrated and context-specific approaches within primary healthcare settings (Chaturvedi, Bhat and Sofi, 2025).

Primary care plays a pivotal role in stunting prevention and management, as it serves as the first point of contact for maternal and child health services (Chen *et al.*, 2025). In Indonesia, primary healthcare centers (Puskesmas) are responsible for growth monitoring, nutrition counseling, immunization, and early detection of growth faltering. However, the effectiveness of these services is strongly influenced by family-level factors, particularly the capacity of families to perform essential health-related roles in daily life (Dickson *et al.*, 2024). Families are the primary environment in which feeding practices, hygiene behaviors, health-seeking decisions, and child stimulation occur, making family engagement central to stunting reduction strategies (Hairuddin, Yulis and Suprapto, 2026).

The concept of family health tasks provides a useful framework for understanding the role of families in child health outcomes. Family health tasks commonly include recognizing health problems, making appropriate health decisions, providing basic care, maintaining a healthy home environment, and utilizing available health services (Hendy *et al.*, 2025). In the context of child nutrition, these tasks translate into timely recognition of growth problems, appropriate infant and young child feeding practices, prevention of infections, and consistent engagement with primary healthcare services. When families are unable to effectively perform these tasks, children may be at higher risk of chronic undernutrition and growth failure (Hovadick *et al.*, 2025).

Existing literature has extensively examined socioeconomic and biomedical determinants of childhood stunting, such as maternal education, household income, birth weight, and infectious diseases (Le-Van and Bui, 2026). However, empirical evidence focusing on family health tasks as functional and behavioral determinants of stunting remains limited, particularly within primary care contexts in low- and middle-income countries. In Indonesia, most stunting-related studies emphasize nutritional intake, sanitation, or policy implementation, while the operational role of families in managing child health within routine primary care has received less attention. This represents a critical knowledge gap, given that many stunting interventions rely on family participation for their success (Lynch *et al.*, 2025).

Understanding the relationship between family health tasks and childhood stunting is essential for strengthening primary care–based interventions. Evidence on how family performance of health tasks relates to child growth outcomes can inform the design of family-centered strategies, enhance counseling approaches, and guide health workers in targeting households at greater risk. Therefore, this study aims to examine the association between family health tasks and childhood stunting in primary care settings in Indonesia using a cross-sectional

design. By focusing on the family as an active unit of care, this study seeks to contribute to the growing body of evidence supporting integrated, family-oriented approaches to stunting prevention and child health promotion.

RESEARCH METHODOLOGY

Study Design

This study employed a quantitative, analytical cross-sectional design to examine the relationship between family health tasks and childhood stunting in primary care settings in Indonesia. A cross-sectional approach was considered appropriate to assess exposure and outcome variables simultaneously and to identify associations within a defined population at a specific point in time. This design is widely used in public health and primary care research to explore determinants of nutritional status among children.

Study Setting and Population

The study was conducted in selected primary healthcare centers (Puskesmas) in Indonesia that provide routine maternal and child health services. The study population consisted of families with children aged 6–59 months who attended growth monitoring or child health services during the data collection period. Children within this age range were selected because they represent the most vulnerable group for growth faltering and stunting.

Sample Size and Sampling Technique

A total of 60 respondents were included in the study. The sample size was determined based on feasibility considerations and the minimum requirements for cross-sectional analytical studies in primary care settings. Participants were recruited using a consecutive sampling technique, whereby all eligible families who met the inclusion criteria and attended the selected primary healthcare centers during the study period were invited to participate until the required sample size was achieved. Inclusion criteria were families with children aged 6–59 months, caregivers who were directly responsible for daily child care, and willingness to participate in the study. Families with children who had congenital abnormalities, chronic illnesses, or conditions affecting linear growth were excluded.

Variables and Measurement

The dependent variable in this study was childhood stunting. Stunting status was determined based on height-for-age measurements using World Health Organization (WHO) Child Growth Standards. Children with a height-for-age z-score (HAZ) below −2 standard deviations were classified as stunted, while those with HAZ ≥ −2 were categorized as non-stunted. Anthropometric measurements were obtained by trained health personnel using standardized equipment and procedures. The independent variable was family health tasks. Family health tasks were assessed using a structured questionnaire adapted from established family health assessment frameworks. The questionnaire covered five domains: recognition of child health problems, decision-making in seeking health care, provision of basic child care, maintenance of a healthy home environment, and utilization of primary healthcare services. Responses were scored and categorized into adequate and inadequate family health task performance based on predetermined cut-off values. Sociodemographic variables, including caregiver age, education level, household income, and child characteristics (age and sex), were collected as potential confounding factors.

Data Collection Procedures

Data were collected through face-to-face interviews with primary caregivers and review of child health records at the primary healthcare centers. Anthropometric data were measured or verified during routine growth monitoring sessions. All data collectors received prior training to ensure consistency and reliability of measurements and interviews.

Data Analysis

Data were analyzed using statistical software. Descriptive statistics were used to summarize sociodemographic characteristics, family health task performance, and stunting prevalence. Bivariate analysis, using the chi-square test, was conducted to examine the association between family health tasks and childhood stunting. A p-value of less than 0.05 was considered statistically significant.

Ethical Considerations

Ethical approval was obtained from an institutional research ethics committee prior to data collection. Written informed consent was secured from all participating caregivers. Confidentiality and anonymity of participants were maintained throughout the study, and participation was voluntary with the right to withdraw at any time without consequences to the services received.

RESULT

Table 1. Sociodemographic Characteristics of Respondents (n = 60)

Variable	Category	n	%
Caregiver age (years)	< 30	22	36.7
	≥ 30	38	63.3
Caregiver education	Primary–Secondary	34	56.7
	Higher education	26	43.3
Household income	Below regional minimum wage	35	58.3
	≥ Regional minimum wage	25	41.7
Child age (months)	6–23	27	45.0
	24–59	33	55.0
Child sex	Male	32	53.3
	Female	28	46.7

Most caregivers were aged ≥30 years and had primary to secondary education, with the majority of households earning below the regional minimum wage. The distribution of child age and sex was relatively balanced. These findings indicate that the study population was predominantly from socioeconomically disadvantaged families, a group known to be vulnerable to child undernutrition.

Table 2. Distribution of Family Health Task Performance

Family health task performance	n	%
Adequate	28	46.7
Inadequate	32	53.3

More than half of the families demonstrated inadequate performance of family health tasks. This suggests limitations in families' ability to recognize child health problems, make appropriate health-related decisions, and effectively utilize primary healthcare services.

Table 3. Prevalence of Childhood Stunting Among Study Participants

Stunting status	n	%
Stunted	24	40.0
Not stunted	36	60.0

The prevalence of childhood stunting in this study was relatively high. This finding confirms that stunting remains a significant public health problem at the primary care level.

Table 4. Association Between Family Health Tasks and Childhood Stunting

Family health task performance	Stunted n (%)	Not stunted n (%)	Total	p-value
Inadequate	18 (56.3)	14 (43.7)	32	0.018
Adequate	6 (21.4)	22 (78.6)	28	

Children from families with inadequate family health task performance showed a higher prevalence of stunting compared to those from families with adequate performance. The association was statistically significant, indicating that family capacity to perform health-related tasks is related to child growth outcomes. The results indicate that childhood stunting was more prevalent among children from families with inadequate family health task performance. A statistically significant association was observed between family health tasks and childhood stunting ($p < 0.05$).

DISCUSSION

This study examined the association between family health tasks and childhood stunting in primary care settings in Indonesia and found a significant relationship between inadequate family health task performance and higher prevalence of stunting. These findings highlight the critical role of families as the primary unit of care in influencing child growth outcomes and reinforce the importance of family-centered approaches in stunting prevention strategies within primary healthcare systems.

The relatively high prevalence of stunting observed in this study is consistent with national and regional reports indicating that stunting remains a major public health concern in Indonesia (Morales, Macchiavello and Rojas-Thomas, 2026). Although national efforts have led to gradual reductions in stunting rates, disparities persist, particularly among socioeconomically disadvantaged households. Children in such households are more likely to experience chronic nutritional deficits due to limited access to nutritious foods, suboptimal caregiving practices, and increased exposure to environmental health risks (Ogino, Sato and Nakazuru, 2025). The findings of this study reaffirm that stunting continues to be a pressing issue at the primary care level, where early detection and prevention should be prioritized (Owoputi *et al.*, 2024).

Family health tasks emerged as a key factor associated with childhood stunting. Families with inadequate performance of health tasks were significantly more likely to have stunted children compared to families with adequate performance (Pahuja and Sanghvi, 2024). This finding supports existing theoretical frameworks that emphasize the family's role in recognizing health problems, making timely health decisions, providing appropriate care, maintaining a healthy home environment, and utilizing healthcare services (Patel *et al.*, 2026). When these tasks are not effectively performed, children may miss critical opportunities for growth monitoring, nutrition counseling, and early intervention, increasing their risk of chronic undernutrition (Safaria, 2026).

The results align with previous studies conducted in low- and middle-income countries that have identified caregiving practices and family behaviors as important determinants of child nutritional status (Sentika *et al.*, 2024). Poor caregiver knowledge, delayed health-seeking behavior, and inadequate utilization of primary healthcare services have been linked to growth faltering and stunting. In the Indonesian context, where primary healthcare services are widely available through Puskesmas, the effectiveness of these services largely depends on active family engagement (Suprapto *et al.*, 2024). Therefore, strengthening family capacity to perform health tasks is essential to maximize the impact of existing health programs (Tito *et al.*, 2024).

Socioeconomic factors observed in this study, such as lower educational attainment and household income, may partially explain the inadequate performance of family health tasks (Wanka *et al.*, 2025). Caregivers with limited education may face challenges in understanding health information, interpreting growth monitoring results, and adopting recommended feeding practices. Similarly, financial constraints can limit access to diverse and nutrient-rich foods, even when caregivers are aware of appropriate nutritional guidelines (Xu, Feng and Shao, 2024). These findings suggest that family health task performance is closely intertwined with broader social determinants of health and should be addressed through multisectoral interventions (Yang *et al.*, 2025).

Primary healthcare providers play a crucial role in supporting families to improve their health task performance. Health workers at the primary care level are well positioned to deliver tailored health education, reinforce positive caregiving behaviors, and identify families at higher risk of poor child growth outcomes (Yue *et al.*, 2025). Integrating family health task assessment into routine child health services may help health workers to provide more targeted counseling and follow-up. Moreover, strengthening communication between health providers and families can enhance trust and improve adherence to recommended health practices.

The findings of this study have important implications for policy and practice. Stunting reduction programs should move beyond a sole focus on biomedical and nutritional interventions and incorporate strategies that strengthen family functioning and caregiving capacity. Family-

centered interventions, such as caregiver education, home-based counseling, and community empowerment programs, may be particularly effective in addressing the underlying behavioral and environmental factors contributing to stunting. Policymakers should consider integrating family health task frameworks into national stunting prevention guidelines and primary healthcare training curricula.

Despite its contributions, this study has several limitations. The cross-sectional design limits the ability to establish causal relationships between family health tasks and childhood stunting. The relatively small sample size and the use of consecutive sampling may also limit the generalizability of the findings. Additionally, family health tasks were assessed using self-reported data, which may be subject to recall or social desirability bias. Future studies employing longitudinal designs, larger samples, and mixed-method approaches are recommended to further explore the causal pathways and contextual factors influencing family health task performance and child growth. In conclusion, this study demonstrates that family health tasks are significantly associated with childhood stunting in primary care settings in Indonesia. Strengthening family capacity to perform essential health tasks should be a key component of stunting prevention strategies. By adopting a family-centered approach within primary healthcare systems, it may be possible to achieve more sustainable improvements in child growth and overall health outcomes.

CONCLUSION

This study concludes that family health tasks are significantly associated with childhood stunting in primary care settings in Indonesia. Children from families with inadequate performance of health-related tasks were more likely to experience stunting, highlighting the central role of the family as the primary context for child growth and development. These findings underscore the importance of addressing behavioral and functional family factors, in addition to biomedical and nutritional determinants, in efforts to reduce childhood stunting.

Based on these findings, it is recommended that primary healthcare services adopt family-centered approaches that strengthen caregivers' capacity to perform essential health tasks. Interventions such as targeted caregiver education, routine assessment of family health task performance, and enhanced counseling during child health visits should be integrated into stunting prevention programs. Policymakers are encouraged to incorporate family health task frameworks into national stunting reduction strategies to improve the effectiveness and sustainability of child nutrition interventions.

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ETHICAL CLEARANCE

This study received ethical approval from the Ethics Committee of Politeknik Sandi Karsa under approval number B-590/PT19.2.1/PP/VI/2025. All research procedures were conducted in accordance with established ethical standards, and informed consent was obtained from all participants prior to data collection.

CONFLICT OF INTEREST

The authors declare that they have no competing interests.

DATA AVAILABILITY

The data supporting the findings of this study are available from the corresponding author upon reasonable request. The data are not publicly available due to ethical and privacy considerations.

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AUTHORS' CONTRIBUTIONS

Isymiarni syarif contributed to the study conception and design, data collection and analysis, manuscript drafting, and final approval of the version to be published.

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