

Policy translation and implementation research of community-based stunting prevention programs at the village level

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ABSTRACT

Introduction: Community-based stunting prevention remains a major challenge in decentralized health governance systems due to variations in policy translation and implementation at the village level. This study aimed to analyze factors influencing the implementation effectiveness of community-based stunting prevention programs.

Methods: A quantitative cross-sectional analytical study was conducted in selected rural villages in Eastern Indonesia between January and April 2026. A total of 130 respondents were selected using proportional stratified random sampling. Data were collected using structured questionnaires and analyzed using descriptive statistics, chi-square tests, and multivariate logistic regression at $\alpha = 0.05$.

Results: Strong institutional coordination was the most dominant factor associated with effective implementation of stunting prevention programs (AOR = 3.76; 95% CI: 1.72–8.19; $p < 0.001$). Good policy communication (AOR = 2.84; 95% CI: 1.31–6.15; $p = 0.008$), high community participation (AOR = 2.57; 95% CI: 1.18–5.60; $p = 0.017$), adequate implementer capacity (AOR = 2.21; 95% CI: 1.03–4.76; $p = 0.041$), and sufficient resource availability (AOR = 2.69; 95% CI: 1.22–5.95; $p = 0.014$) also significantly improved implementation effectiveness.

Conclusion: Effective stunting prevention requires adaptive governance systems emphasizing multisectoral coordination, community participation, and context-sensitive policy implementation at the village level.

Keywords: Community Participation; Governance; Policy Implementation; Public Health Policy; Stunting.

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Highlight:

- Institutional coordination was the strongest predictor of effective implementation of a stunting prevention program.
- Clear policy communication significantly improved the effectiveness of community-based stunting interventions.
- Community participation strengthened village-level implementation and program sustainability.
- Implementer capacity and resource availability influenced the translation of policy into local action.
- Adaptive governance approaches are essential for reducing disparities in stunting in rural communities.

INTRODUCTION

Stunting remains a major public health and human development challenge in low- and middle-income countries, particularly within rural and socioeconomically disadvantaged populations. The World Health Organization identifies stunting as a chronic condition caused by prolonged undernutrition, recurrent infections, inadequate maternal health, poor sanitation, and limited healthcare access [1]. In Indonesia, although national stunting prevalence has gradually declined, substantial disparities persist across regions and villages, indicating that policy implementation effectiveness remains inconsistent. Community-based stunting prevention has therefore become a national priority because villages function as the closest governance structure to families during the first 1,000 days of life [2]. However, the availability of national policies does not automatically ensure successful implementation at the grassroots level. Many village programs continue to experience fragmented coordination, weak institutional commitment, inadequate understanding of policies among local implementers, and limited community engagement [3].

The challenge of stunting prevention extends beyond biomedical and nutritional dimensions and increasingly reflects governance capacity, institutional adaptation, policy communication, and sociocultural dynamics [4]. National nutrition policies require translation into practical community actions involving village governments, health cadres, midwives, family welfare organizations, and local stakeholders [5]. Nevertheless, policy translation processes are frequently constrained by administrative formalism, sectoral fragmentation, and insufficient participation from target communities. In many villages, development priorities remain focused on physical infrastructure rather than preventive health interventions [6]. Consequently, community-based stunting programs are often implemented as routine administrative activities rather than as evidence-driven strategies targeting vulnerable households. This condition contributes to persistent gaps between policy objectives and implementation outcomes [7].

Previous studies have primarily examined stunting from epidemiological, nutritional, maternal, and socioeconomic perspectives [8]. Several investigations identified maternal education, household income, sanitation, food insecurity, breastfeeding practices, and healthcare utilization as significant determinants of child stunting. Other studies explored the effectiveness of integrated health services, supplementary feeding programs, and maternal-child health interventions in reducing nutritional vulnerability [9]. Although these studies provide important evidence on the proximal determinants of stunting, they offer limited insight into how policies are operationalized within village governance systems. Existing literature frequently treats policy implementation as a linear administrative process and pays insufficient attention to the interactions among actors, institutions, power relations, and participatory mechanisms influencing implementation quality [10].

Research on decentralization and local governance demonstrates that community health programs are strongly influenced by institutional readiness, leadership commitment, fiscal allocation, and bureaucratic coordination [11]. Several studies indicate that implementation effectiveness depends on communication clarity, resource availability, implementer capacity, and contextual adaptation. However, most implementation studies focus on district- or national-level policy evaluation rather than on how policies are translated into village-level practices [12]. Evidence remains limited regarding how village actors interpret national stunting policies, negotiate implementation barriers, and adapt interventions according to local sociocultural contexts. Furthermore, many previous studies emphasize program outputs and prevalence reduction without critically analyzing the governance processes underlying implementation success or failure [13].

Another important limitation in current literature is the insufficient integration of policy translation theory within community-based nutrition research. Policy translation emphasizes that policies are not implemented mechanically but are continually interpreted, modified, and reconstructed by local actors in light of contextual realities [14]. In village settings, national stunting policies may undergo significant transformation because of political priorities, institutional limitations, resource constraints, and cultural considerations. As a result, identical policies may produce different implementation outcomes across villages despite similar regulatory frameworks. Unfortunately, empirical evidence explaining these translation processes remains scarce, particularly in decentralized rural settings.

Based on these considerations, a significant research gap persists regarding how community-based stunting prevention policies are translated and implemented at the village level. Current evidence inadequately explains the interaction between national policy directives and local implementation realities, especially concerning institutional coordination, participatory governance, actor interpretation, and contextual adaptation. The novelty of this study lies in integrating perspectives on policy translation and implementation to examine community-based stunting prevention programs within village governance systems. Unlike previous studies that have focused mainly on nutritional determinants or program outcomes, this research examines how policies are interpreted, adapted, and operationalized by local actors. Therefore, this study aimed to analyze the policy translation and implementation processes of community-based stunting prevention programs at the village level, identify barriers and facilitators to implementation, and explore the influence of governance dynamics and community participation on program effectiveness.

RESEARCH METHODOLOGY

Study Design

This study employed a quantitative cross-sectional analytical design to examine the translation and implementation of community-based stunting prevention policies at the village level. A cross-sectional approach was considered appropriate because the study aimed to assess relationships between policy implementation factors, governance dynamics, community participation, and the effectiveness of stunting prevention programs within a specific period. The design enabled simultaneous measurement of independent and dependent variables and facilitated identification of implementation-related determinants affecting program performance in village settings.

Setting and Participants

The study was conducted in selected rural villages implementing community-based stunting prevention programs in Eastern Indonesia between January and April 2026. These villages were selected because they had active village health initiatives and ongoing stunting prevention interventions coordinated by village governments and primary healthcare centers. The study population consisted of village officials, health cadres, community health workers, and mothers of children under five years who were directly involved in or exposed to stunting prevention activities. Inclusion criteria included participants aged ≥ 18 years, residing in the study area for at least one year, actively participating in community-based health programs, and willing to provide informed consent. Participants with communication difficulties, incomplete questionnaire responses, or who were unavailable during data collection were excluded from the study.

A total of 130 respondents were recruited using proportional stratified random sampling to ensure adequate representation of different stakeholder groups within the village governance and community health system. Sample size was determined using the Slovin formula with a 95% confidence level and a 5% margin of error, adjusted for an anticipated nonresponse rate of 10%. This sample size was considered sufficient to detect statistically significant relationships among study variables.

Variables and Measurement

The dependent variable in this study was the effectiveness of community-based stunting prevention program implementation. Independent variables included policy communication, institutional coordination, implementer capacity, community participation, resource availability, and local governance support. Operational definitions of variables were developed based on policy implementation and community health governance frameworks. Policy communication referred to the clarity and consistency of information dissemination regarding stunting prevention policies. Institutional coordination described collaborative mechanisms among village governments, healthcare providers, and community organizations. Implementer capacity reflected the knowledge and competencies of local actors involved in program execution. Community participation measured the level of involvement of families and community members in planning and implementation activities.

Data were collected using a structured questionnaire developed from previous validated implementation and governance studies and adapted to the local context. The instrument consisted of demographic characteristics and Likert-scale items measuring each study construct. Content validity was evaluated by three public health and health policy experts. Construct validity testing was performed

using Pearson product-moment correlation analysis, while reliability testing used Cronbach's alpha coefficient. All variables demonstrated acceptable validity coefficients ($r > 0.30$) and reliability values (Cronbach's alpha > 0.70). Primary data were obtained directly from respondents through face-to-face interviews and self-administered questionnaires.

Data Collection

Data collection was conducted by trained research assistants who received standardized training regarding study objectives, interview procedures, ethical considerations, and questionnaire administration. Before data collection, a pilot test with 15 respondents outside the study area was conducted to evaluate the instrument's clarity and feasibility. Respondents were approached through coordination with village authorities and community health centers. After obtaining informed consent, questionnaires were distributed and completed under the researcher's supervision to minimize missing data and response bias. Data quality control procedures included daily completeness checking, double-entry verification, and random rechecking of questionnaires by the principal investigator to ensure consistency and accuracy.

Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 26.0. Descriptive statistics were used to summarize respondent characteristics and study variables, including frequencies, percentages, means, and standard deviations. Bivariate analysis was performed using the chi-square test and independent t-test to identify associations between independent variables and program implementation effectiveness. Variables with p-values < 0.25 in bivariate analysis were included in multivariate analysis. Subsequently, multivariate logistic regression was conducted to identify the dominant predictors of the effectiveness of community-based stunting prevention policy implementation. Adjusted odds ratios (AOR) with 95% confidence intervals (CI) were reported. Statistical significance was determined at $\alpha = 0.05$.

Ethical Approval

This study received ethical approval from the Health Research Ethics Committee of Universitas Mega Buana Palopo with approval number No. 112/KEPK-UMBP/I/2026. All participants received detailed information regarding the study objectives, procedures, confidentiality, voluntary participation, and their right to withdraw at any stage without consequences. Written informed consent was obtained from all respondents before participation. All collected data were anonymized and used solely for research purposes.

RESULT

Table 1. Characteristics of Respondents (n = 130)

Characteristics	Frequency (n)	Percentage (%)
Age		
18–30 years	34	26.2
31–45 years	58	44.6
>45 years	38	29.2
Sex		
Male	42	32.3
Female	88	67.7
Education Level		
Primary–Secondary School	47	36.2
Senior High School	55	42.3
Higher Education	28	21.5
Occupation/Role		
Village Officials	24	18.5
Health Cadres	39	30.0
Healthcare Workers	18	13.8
Mothers of Children Under Five	49	37.7

Length of Involvement in Program		
<2 years	41	31.5
2–5 years	57	43.8
>5 years	32	24.7

Most respondents were aged 31–45 years (44.6%), female (67.7%), and had a senior high school education (42.3%). Mothers of children under five represented the largest participant group (37.7%), followed by health cadres (30.0%). Nearly half of respondents had participated in community-based stunting prevention programs for 2–5 years (43.8%), indicating moderate community engagement and experience with implementation.

Table 2. Bivariate Analysis of Factors Associated with Effective Implementation of Community-Based Stunting Prevention Programs

Variables	Effective Implementation n (%)	Less Effective Implementation n (%)	p-value
Policy Communication			
Good	48 (73.8)	17 (26.2)	0.001
Poor	25 (38.5)	40 (61.5)	
Institutional Coordination			
Strong	52 (74.3)	18 (25.7)	<0.001
Weak	21 (35.0)	39 (65.0)	
Community Participation			
High	50 (71.4)	20 (28.6)	0.002
Low	23 (38.3)	37 (61.7)	
Implementer Capacity			
Adequate	47 (69.1)	21 (30.9)	0.004
Inadequate	26 (41.9)	36 (58.1)	
Resource Availability			
Sufficient	45 (72.6)	17 (27.4)	0.003
Insufficient	28 (41.2)	40 (58.8)	

Bivariate analysis demonstrated that policy communication, institutional coordination, community participation, implementer capacity, and resource availability were significantly associated with effective implementation of community-based stunting prevention programs ($p < 0.05$). Villages with stronger coordination systems and better policy communication showed higher proportions of effective program implementation.

Table 3. Multivariate Logistic Regression Analysis of Factors Influencing Effective Implementation of Community-Based Stunting Prevention Programs

Variables	AOR	95% CI	p-value
Good Policy Communication	2.84	1.31–6.15	0.008
Strong Institutional Coordination	3.76	1.72–8.19	<0.001
High Community Participation	2.57	1.18–5.60	0.017
Adequate Implementer Capacity	2.21	1.03–4.76	0.041
Sufficient Resource Availability	2.69	1.22–5.95	0.014

Multivariate analysis indicated that strong institutional coordination was the most dominant factor influencing effective implementation of community-based stunting prevention programs (AOR = 3.76; 95% CI: 1.72–8.19; $p < 0.001$). Villages with strong coordination mechanisms were nearly four times more likely to implement effective stunting prevention programs than villages with weak coordination. Policy communication, community participation, implementer capacity, and resource availability also showed statistically significant positive associations with implementation effectiveness.

The findings demonstrated that the effectiveness of community-based stunting prevention programs was strongly influenced by governance-related and institutional factors at the village level. Most respondents were women and actively involved in community health activities, reflecting the central role of families and community actors in local nutrition interventions. Bivariate analysis

revealed significant associations between policy communication, institutional coordination, community participation, implementer capacity, resource availability, and implementation effectiveness. Villages with clearer policy dissemination and stronger collaborative mechanisms showed higher program performance. Multivariate analysis further confirmed that institutional coordination was the strongest determinant of effective program implementation. Villages characterized by active collaboration among village governments, healthcare workers, community cadres, and local stakeholders were more likely to achieve effective implementation outcomes. In addition, adequate policy communication and higher levels of community participation significantly strengthened program execution. These findings indicate that successful stunting prevention requires not only technical health interventions but also adaptive governance systems that integrate local actors, resources, and community engagement. The study highlights that policy translation at the village level is shaped by institutional interaction, implementation capacity, and contextual adaptation rather than by administrative compliance alone.

DISCUSSION

The findings of this study demonstrate that the effectiveness of community-based stunting prevention programs is strongly influenced by governance dynamics, institutional coordination, and the capacity of local actors to translate national policies into operational village-level interventions. Among all examined variables, institutional coordination emerged as the strongest determinant of effective program implementation. This finding indicates that stunting prevention cannot be addressed solely through technical nutrition interventions or health service expansion, but requires collaborative governance mechanisms integrating village governments, healthcare providers, community cadres, and families. Effective coordination enables clearer role distribution, more consistent communication, improved resource mobilization, and stronger accountability within community-based health programs. In decentralized governance settings, village institutions function not merely as administrative implementers but also as policy translators, adapting national directives to local social and cultural realities [15].

The study also highlights the importance of policy communication in shaping implementation effectiveness. Villages characterized by clearer dissemination of policy objectives, implementation guidelines, and program priorities demonstrated stronger community participation and more consistent intervention delivery [16]. This finding suggests that communication is not simply an administrative activity but a strategic governance instrument influencing policy interpretation and collective action. In many rural settings, ambiguity in policy communication contributes to fragmented implementation, as local actors interpret program objectives differently depending on institutional interests and resource availability [17]. Consequently, effective policy translation depends on local governments and health institutions' ability to communicate policies in ways that are understandable, contextually relevant, and operationally feasible for community actors [18].

Another important finding concerns the role of community participation in strengthening the implementation of stunting prevention. Villages with higher levels of community engagement were more likely to demonstrate effective program execution and sustained participation in maternal and child health activities [19]. This finding indicates that community-based programs become more effective when local populations are positioned not only as program beneficiaries but also as active actors in planning, implementation, and monitoring [20]. Participatory approaches encourage collective responsibility, improve trust between communities and institutions, and strengthen local ownership of health interventions. The findings therefore reinforce the argument that sustainable stunting prevention requires socially embedded governance systems rather than purely top-down administrative approaches [21].

The results of this study are consistent with previous research emphasizing the importance of multisectoral coordination and governance capacity in addressing complex public health problems. Several studies in developing countries reported that fragmented institutional relationships and weak coordination mechanisms significantly reduce the effectiveness of nutrition interventions [22]. Previous implementation studies also identified communication clarity, leadership commitment, and resource adequacy as important determinants of successful community health programs. However, this study extends existing literature by demonstrating how policy translation processes occur at the village level

through interactions among local actors, institutional structures, and contextual realities [23]. Unlike earlier studies that focused primarily on epidemiological determinants or program outputs, the present study offers a governance-oriented perspective that explains why similar national policies may yield varying implementation outcomes across communities [24].

This study also contributes conceptually to policy translation theory within the context of community health governance. Policy implementation is often conceptualized as a linear process in which local actors merely execute centrally designed programs [25]. However, the findings indicate that village actors continuously reinterpret, negotiate, and adapt policy directives according to local institutional capacities, sociocultural norms, and development priorities. In practice, national stunting policies are transformed during implementation because local actors selectively prioritize interventions based on perceived feasibility and resource constraints [26]. This condition explains why implementation outcomes remain heterogeneous despite standardized national frameworks. Therefore, understanding village-level governance dynamics becomes essential for improving policy effectiveness and reducing inequalities in community health interventions [27].

Despite these contributions, several limitations should be considered when interpreting the findings. First, the cross-sectional design limits the ability to establish causal relationships between governance factors and implementation effectiveness [28]. The study captured conditions within a single period and may not fully reflect long-term policy adaptation processes. Second, data collection relied primarily on self-reported responses, which may introduce social desirability and recall biases [29]. Third, the study was conducted in selected rural villages within a specific regional context, potentially limiting generalizability to urban areas or regions with different administrative structures and sociocultural characteristics. Additionally, quantitative analysis may not fully capture the complexity of political negotiations, informal leadership dynamics, and contextual interactions influencing policy translation processes.

Future research should therefore adopt longitudinal and mixed-method approaches to examine how policy translation evolves within decentralized governance systems. Qualitative investigations involving policymakers, village leaders, and community stakeholders may provide a deeper understanding of negotiation processes, institutional power relations, and mechanisms of contextual adaptation shaping implementation outcomes. Comparative studies across provinces or administrative settings are also necessary to identify structural determinants contributing to implementation disparities. Furthermore, future studies should explore integrating digital governance systems, community empowerment models, and culturally adaptive interventions to strengthen village-level stunting prevention programs. Such approaches may contribute to more responsive and sustainable policy implementation frameworks that can address persistent nutritional inequalities in vulnerable communities.

CONCLUSION

This study demonstrated that the effectiveness of community-based stunting prevention programs at the village level is strongly influenced by governance-related factors, particularly institutional coordination, policy communication, community participation, implementer capacity, and resource availability. Strong coordination among village governments, healthcare workers, community cadres, and local stakeholders significantly improved the translation and implementation of national stunting prevention policies into operational community interventions. The findings indicate that successful stunting prevention requires not only technical health programs but also adaptive governance systems that integrate multisectoral collaboration and community engagement. The study highlights that policy implementation at the village level is shaped by contextual interpretation and institutional interaction rather than administrative compliance alone. Therefore, strengthening village governance capacity, improving intersectoral communication, and enhancing community participation should become strategic priorities in future stunting prevention policies. Evidence-based interventions focusing on collaborative governance and locally adaptive implementation mechanisms are essential to improve program sustainability and reduce persistent nutritional inequalities in vulnerable communities.

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Conflict of Interest

The author declares that there are no conflicts of interest related to this study, including financial, institutional, or personal relationships that could have influenced the research process or interpretation of findings.

Authors' Contributions (CRediT Taxonomy)

Indrawati Aris: Conceptualization, methodology, investigation, data curation, formal analysis, writing—original draft preparation, writing—review and editing, supervision, and final approval of the manuscript.

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Declaration of Generative AI Use

Generative artificial intelligence tools were used in a limited capacity to support language refinement, grammar checking, and manuscript organization during the writing process. All scientific content, data interpretation, analysis, and final decisions regarding the manuscript were independently conducted and critically reviewed by the author. The author takes full responsibility for the accuracy, integrity, and originality of the manuscript content.

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