



Nutrition Programs and Health Policies for Stunting Prevention in Indonesia: Systematic Review

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Abstract

Stunting remains a major public health concern in Indonesia, with a national prevalence of 21.5% in 2023, exceeding the global target of 14%. Significant disparities exist, with prevalence reaching 39.4% in Central Papua, 37.9% in East Nusa Tenggara, and 37.3% in Highland Papua, compared to only 7.2% in Bali. This narrative literature review, conducted under PRISMA principles, searched PubMed, ProQuest, and Google Scholar for studies published between 2020 and 2025 using the keywords "stunting," "nutrition policy," and "Indonesia." From 6,410 records, 10 studies met the inclusion criteria. Three dominant themes emerged: (1) regional policies and cross-sectoral coordination, where East Lombok reduced stunting from 43.5% (2018) to 18.1% (2021), while Asmat experienced an increase from 38.1% (2021) to 54.5% (2022) due to weak implementation; (2) health sector-driven interventions remain central, yet multisectoral strategies that integrate sanitation, education, and community empowerment are more effective; and (3) data-driven policies using SSGI and strong community participation ensure targeted and sustainable outcomes. Despite progress, challenges persist in equity, monitoring, and scalability, particularly in eastern provinces with weaker health systems. Strengthening multisectoral collaboration, expanding evidence-based policies, and enhancing community engagement are essential to accelerate stunting reduction in Indonesia.

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Introduction

Stunting is a condition of chronic malnutrition that affects children's physical growth and cognitive development, which if left untreated can lead to long-term societal consequences (Manangsang et al., 2024). The high number of people living at the poverty line contributes to the persistently high percentage of stunted children under five (Mutmainnah et al., 2023).

According to the 2023 Indonesian Health Survey (SKI), the prevalence of stunting decreased slightly from 21.6% (SSGI 2022) to 21.5%. This decline has been consistent over the past ten years (2013–2023). Nevertheless, these figures still fall short of the 2020–2024 National Medium-Term Development Plan (RPJMN) target of 14% by 2024 and the WHO standard of below 20%. Among the 38 provinces in Indonesia, 15 provinces have stunting prevalence below the national average. The three provinces with the highest stunting prevalence are Central Papua (39.4%), East Nusa Tenggara (37.9%), and Highland Papua (37.3%). Meanwhile, three provinces that have achieved the RPJMN 2024 target are Bali (7.2%), Jambi (13.5%), and Riau (13.6%) (Kemenkes BKPK, 2023).

The highest stunting rates occur in Eastern Indonesia, based on SKI 2023. Research has identified several main risk factors, including mothers with low education who tend to lack adequate knowledge about nutrition and proper complementary feeding practices, increasing the risk of stunting by 1.57 times (Suratri et al., 2023). Living in rural areas also increases the likelihood of stunting ($OR \approx 1.39$) due to limited access to health services and sanitation (Beal et al., 2018). Additionally, children aged 12–35

months are the most vulnerable group (OR up to 2.08) because of rapid growth periods often accompanied by insufficient proper nutritional intake (Ashar et al., 2024).

Since 2018, the Indonesian government has launched eight convergence actions as steps to accelerate the reduction of stunting. This program includes various initiatives such as situation analysis, activity planning, stunting deliberation meetings, and improved data management. However, results vary across regions. Some areas have succeeded in reducing stunting rates, but many still face challenges such as limited resources and support (Nurva & Maharani, 2023).

Although various studies in Indonesia have examined nutrition programs and health interventions for stunting control, most still focus on specific interventions or strategies at the national level. Evidence on the effectiveness of region-based nutrition and health policies is still limited, particularly in explaining why some provinces have managed to achieve their stunting reduction targets while others still face obstacles. Previous research has also tended to use aggregate data without adequately considering contextual differences such as geographical challenges, socio-cultural diversity, and local governance capacity. This gap underscores the need for a systematic review that not only maps existing programs and policies, but also critically evaluates implementation and results in various regions of Indonesia. Therefore, the author has compiled this systematic review to summarize the nutrition program and health policy to preventing stunting in Indonesia.

Methods

This study uses a systematic review methodology to identify nutrition programs and health policies that are effective in preventing stunting in Indonesia. A comprehensive literature search was conducted in various online databases, including Proquest, PubMed, and Google Scholar. The combination of keywords used in the literature search was stunting handling policies, stunting prevention in Eastern Indonesia, adjusted to focus on nutrition interventions and health policies related to stunting.

The inclusion criteria set for this study are quantitative research articles published between 2020 and 2025 in both English and Indonesian. While the exclusion criteria for this study are qualitative research articles, articles that cannot be accessed in full text, as well as systematic reviews, literature reviews, and meta-analyses are excluded from consideration. The article selection process is carried out systematically following the PRISMA 2020 guidelines to ensure transparency and reproducibility.

Of the total 6410 articles identified, only 10 met the inclusion criteria and were relevant to the research objectives after undergoing a multi-stage screening process based on the PRISMA 2020 framework. These seven articles will be further analyzed to identify the most effective nutrition programs and health policies in preventing stunting in Indonesia. A comprehensive analysis of these articles is anticipated to provide valuable insights for policymakers and health practitioners in their efforts to address the problem of stunting in Indonesia.

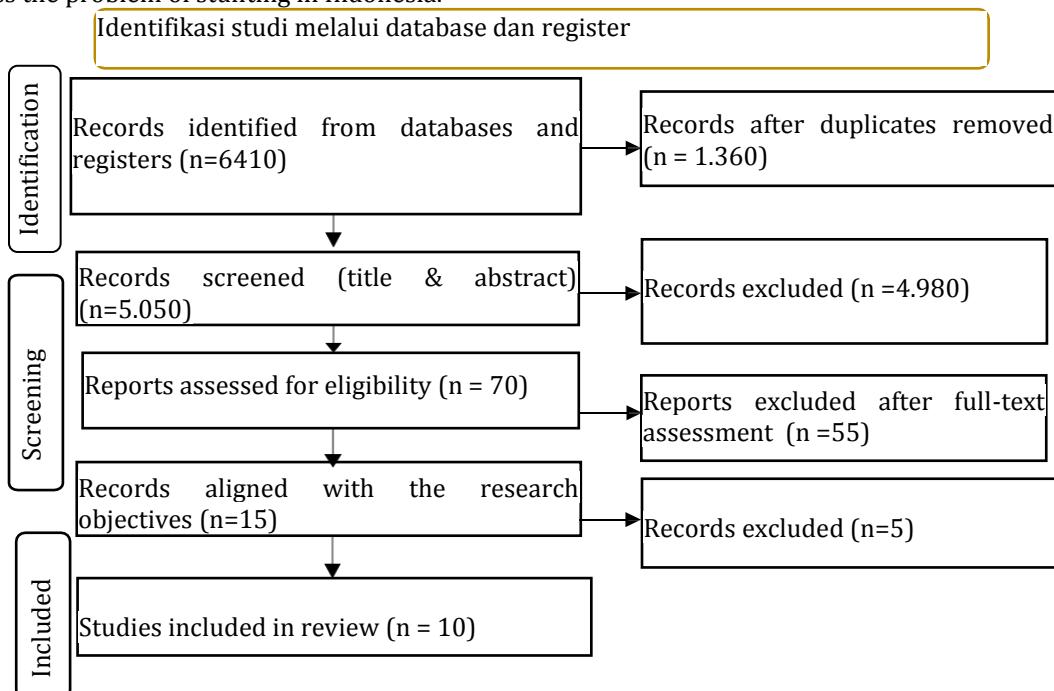


Figure 1. Flow diagram of the systematic review: PRISMA 2020

Results

The results of the systematic review process showed that 10 primary articles met the inclusion and relevance criteria, with a main focus on addressing the stunting problem in Eastern Indonesia. These articles were selected because they present strategic policies implemented by the government in Eastern Indonesia to tackle stunting. The selected literature comes from reputable databases and has undergone a rigorous selection process based on topic relevance, methodological feasibility, data completeness, and publication within the last five years. To support transparency and traceability of the selection process, the search results are presented in a table summarizing the characteristics and key findings of each journal.

Table 1. systematic Review

No	Article Title, Author, Year	Research Variables	Population & Sample	Types of Policies/Interventions	Research Results
1	Governance Networking Analysis in the Implementation of Stunting Management Policy in North Central Timor Regency (Rembu et al., 2025)	Governance Networking (multi-actor collaboration)	North Central Timor Regency, East Nusa Tenggara; TPPS and local government informant s	Formation of the Stunting Reduction Acceleration Team (TPPS) involving government, private sector, and academics	TPPS operated effectively for 4 years, successfully reducing the stunting rate in the regency.
2	Analysis of the Implementation of Stunting Reduction Policy in Penfui Timur Village, Kupang Regency (Page et al., 2025)	Implementation of stunting reduction policy	Penfui Timur Village, Kupang Regency (8 informants)	Implementation of Regent Regulations and village TPPS through the Health Office and posyandu	Stunting remains at 27.3%; policies have been implemented but are not yet optimal, requiring improved socialization and practical utilization of policy documents.
3	Implementation Outcomes of National Convergence Action Policy to Accelerate Stunting Prevention and Reduction at the Local Level in Indonesia:	Implementation outcomes: acceptability, adoption, appropriateness, feasibility, fidelity, cost, coverage, sustainability	Cirebon Regency; 172 respondent s (districts, sub-districts, villages)	Implementation of convergence policies (8 actions to accelerate stunting)	Implementation is good at the district level, but weak at the village level due to limited commitment & coordination; Role is still dominant in the health sector

No	Article Title, Author, Year	Research Variables	Population & Sample	Types of Policies/Interventions	Research Results
A Qualitative Study (Herawati & Sunjaya, 2022)					
4	Determination of appropriate policy targets to reduce the prevalence of stunting in children under five years of age in urban-poor communities in Indonesia: a secondary data analysis of the 2022 Indonesian national nutritional status survey (Laksono et al., 2024)	Stunting determinants & policy indicators	2022 SSGI data; urban-poor population	Data-driven policy goal setting	SSGI-based target determination makes interventions more focused, efficient, and in accordance with the urban-poor context
5	Implementation of Stunting Reduction Regulation s and Policies in East Lombok Regency: Developing an implementation model (Taofik et al., 2024)	Implementation mechanism, cross-sector collaboration, implementation capacity	East Lombok Regency; Key informants (health centers, offices, villages, communities)	Regional stunting policy implementation model	Effective models emphasize community engagement, cross-sector coordination, and local capacity building
6	Distribution and Determinants of birth length,	Determinant factors: child characteristics (birth length,	Toddlers (<5 years), n = 7,835, SSGI 2021	Spatial analysis & recommendations for multifactorial interventions based	Short birth length and low birth weight are

No	Article Title, Author, Year	Research Variables	Population & Sample	Types of Policies/Interventions	Research Results
	Stunting in East Nusa Tenggara Province, Indonesia in 2021: A Spatial Analysis (Meiyetrian i et al., 2023)	birth weight)	data in East Nusa Tenggara	on regional context	significantly associated with stunting; integrated multisectoral interventions are needed in East Nusa Tenggara (NTT).
7	Relationship Between Nutritional Status of Toddlers and the Incidence of Stunting in the Working Area of Kota Timur Health Center (Madiko et al., 2023)	Nutritional status of toddlers and incidence of stunting	Toddlers in the working area of Kota Timur Community Health Center (Papua)	Nutritional status analysis as a basis for community health center service policies & education	Nutritional status is significantly related to stunting incidence; early intervention through active community health centers (puskesmas) and posyandu services is necessary.
8	Evaluation of Stunting Prevention Policy in Asmat Regency, South Papua Province (Rerey et al., 2023)	Stunting prevention policy	Asmat Regency; 12 informant s (FGD, interviews)	Preventive interventions through regional policies	Prevalence increased from 38.1% (2021) to 54.5% (2022); implementation has not been effective.
9	Implementation of Stunting Prevention Policy by the Population Control and Family Planning Office of South Central Timor Regency in Kie District	Implementation of family planning & stunting prevention policy	Kie District, South Central Timor; 47 informant s	Local Family Planning Office's family planning program plus stunting socialization	Stunting rates remain high (~44.1%); implementation has not yet achieved optimal success.

No	Article Title, Author, Year	Research Variables	Population & Sample	Types of Policies/Interventions	Research Results
(Fallo, 2020)					
10	Implementation of Stunting Handling Policy in East Lombok (Case Study in Lenek Duren Village, Lenek District) (Wididiati et al., 2022)	Implementation of stunting handling policies	Health Office, Bappeda, PMD Office, Lenek Sub-district Head, Lenek Duren Village Head, Posyandu Cadres, and Parents of Stunting Toddlers	East Lombok Regent Regulation No. 48 of 2019 concerning Stunting Reduction Specific and sensitive nutrition intervention programs (Healthy Living Community Movement, 1000 HPK Movement, nutrition education, PMT, rural sanitation, Sustainable Food House Area, utilization of village funds)	The program reduced the prevalence of stunting from 43.51% (2018) → 18.13% (2021).

Efforts to handle stunting in Indonesia have been carried out through various regional policies and interventions, such as the formation of acceleration teams (TPPS), the issuance of regent regulations, to family planning and nutrition education programs. Several studies have shown positive results, for example a significant decrease in prevalence in East Lombok, while other areas such as Asmat have actually experienced an increase in stunting rates due to ineffective implementation. This emphasizes that success is highly dependent on regional commitment, consistency of implementation, and effectiveness of coordination between actors.

Most studies highlight the dominance of the health sector in policy implementation, especially through health centers and posyandu. However, stunting has been shown to be influenced by multidimensional factors, including social, economic, and environmental conditions. Therefore, multi-sector interventions such as the use of village funds, nutrition education, sanitation improvement, and community empowerment are considered more appropriate to answer the complexity of the problem. Cross-sectoral collaboration has been proven to strengthen policy effectiveness, as seen in the implementation model in East Lombok and the establishment of TPPS in NTT.

In addition, the use of nutrition survey data (SSGI) provides clearer direction in determining policy targets, especially for the urban poor who are very vulnerable. The data-driven approach allows for more focused and contextual interventions. On the other hand, community participation also plays an important role in ensuring the sustainability of the program. In general, research trends show that the success of stunting management is achieved when regional policies are strong, data-based, and supported by multi-sector coordination with active community involvement.

Discussion

The role of regional policies and cross-sector coordination

Several studies highlight the importance of local regulations in accelerating stunting reduction. Study (Paji et al., 2025; Rembu et al., 2025; Wididiati et al., 2022) shows that local policies such as the establishment of TPPS or Regent Regulations can strengthen coordination between actors, although the results vary. The success in East Lombok, which reduced the prevalence of stunting by 25% in three years, proves the consistent effectiveness of the policy. However, the example of Asmat (Rerey et al., 2023) emphasizing that weak coordination and commitment actually worsen the prevalence. This is in line with policy implementation theory (Mazmanian, D & Paul, A, 1986), which emphasizes the importance of clarity of purpose and political support. The policy implication for Indonesia is to strengthen regional leadership and ensure the sustainability of regulations through cross-sectoral monitoring and evaluation.

Dominance of the health sector and the need for multisectoral interventions

Most studies place the health sector as the dominant actor, for example the role of health centers and posyandu in research (Madiko et al., 2023) and (Herawati & Sunjaya, 2022). However, the

determinants of stunting are multidimensional, including economic, social, and environmental factors, as shown by (Meiyetriani et al., 2023). Therefore, policies that focus only on health services tend to be less effective in the long run. Community-based implementation model in East Lombok (Taofik et al., 2024) shows that community involvement, cross-sector collaboration, and utilization of village funds can increase policy effectiveness. Theory Social Determinants of Health (Marmot, 2005) supports the view that health is influenced by broader socio-economic factors. The implication is that the Indonesian government needs to encourage a multisectoral approach, where nutrition interventions are combined with improving sanitation, education, and family economic empowerment.

Data-driven interventions and community participation

Use of nutrition survey data (SSGI) as indicated by (Laksono et al., 2024) able to direct policies to more appropriate target groups, especially the urban poor. This approach is in line with the principle evidence-based policy making that emphasizes the use of scientific evidence for policy formulation (Nutley et al., 2007). In addition, community involvement in the planning and implementation of interventions, as seen in the study (Taofik et al., 2024) and (Rembu et al., 2025), strengthening the sustainability of the program. The combination of a data-driven approach and local participation ensures interventions are not only on target but also accepted by the community. The policy implication for Indonesia is to expand the use of national survey data and encourage decentralization of planning, so that stunting policies are more adaptive to the local context.

Overall, the discussion shows that stunting handling in Indonesia requires more consistent, multisectoral, data-based, and participatory policies. For the next stage, policies should not only strengthen formal regulations, but also ensure measurable implementation mechanisms through monitoring, evaluation, and cross-sectoral performance incentives. An evidence-based policy approach must be the standard in setting goals and allocating resources, so that interventions are more targeted, especially for vulnerable groups. In addition, community empowerment needs to be improved so that the program does not stop at the technical level, but is truly internalized in the practice of daily life. With this combination of strategies, Indonesia has a great opportunity to accelerate the achievement of sustainable stunting reduction targets.

Conclusion

Studies of various studies show that efforts to address stunting in Indonesia have been carried out through various strategies, but the results are highly dependent on the context and consistency of implementation. Three main themes can be drawn from the existing literature. First, the role of regional policies has proven to be important: regions with strong regulations and cross-sectoral coordination are able to significantly reduce the prevalence of stunting, while regions with weak commitments actually experience an increase. Second, although the health sector is still the dominant actor, complex determinants of stunting require multi-sector interventions that include aspects of nutrition, sanitation, education, and family economic empowerment. Third, the use of nutrition survey data and community participation provides a more targeted direction and strengthens the sustainability of the program. Overall, a combination of evidence-based, multi-sector, and community-based policies is key to accelerating stunting reduction in Indonesia.

For the government, it is important to strengthen cross-sectoral monitoring and evaluation mechanisms, expand the use of SSGI data for target setting, and encourage community involvement in program planning and implementation. Policies should also integrate nutrition interventions with improved sanitation, nutrition education, and family economic empowerment through the use of village funds. Meanwhile, for researchers, it is necessary to conduct longitudinal studies and evaluation of policy impacts in order to provide stronger evidence for program improvement. With these measures, stunting policies in Indonesia can be more adaptive, sustainable, and have a real impact on children's welfare.

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