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Cross-Sectoral Collaboration in Stunting Prevention: Implementation in Donggala Regency, Central Sulawesi

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ABSTRACT

Introduction: The prevalence of stunting in Donggala Regency has increased from 29.5% in 2021 to 32.4% in 2022. The coordination system is not yet optimal, interventions are carried out separately and do not reach the target, and there is no monitoring and evaluation in stunting handling. The objective of the research is to analyze the implementation of cross-sectoral collaboration in stunting handling in Donggala Regency.
Methods: This research employs a qualitative methodology, gathering data through in-depth interviews. The 12 informants are members of the Donggala Regency Stunting Reduction Acceleration Team, comprising: The Regional Secretary, The Head of BAPPEDA (Regional Development Planning Agency), The Head of Village Community Empowerment Agency, The Head of Population Control and Family Planning Agency, The Head of Public Works and Housing Agency, The Head of Housi
ng and Land Agency, The Head of Health Agency, The Head of Social Agency, The Head of Education and Culture Agency, The Head of Agriculture Agency, The Head of Food Security Agency, The Head of Women's Empowerment and Child Protection Agency, and Puskesmas (Community Health Center).
Results: The research findings reveal that while policies and implementation have been initiated, they remain suboptimal due to several factors Independent OPD interventions, Misaligned program targeting, Absence of monitoring and evaluation, Unclear task delineation, Inadequate interpretation of job descriptions.
Conclusion: In order to improve stunting interventions, the results highlight the necessity of improved monitoring, explicit role delineation, and increased cross-sectoral collaboration. For stunting prevention initiatives to be effective and long-lasting, policy integration, resource allocation, and community engagement must be strengthened

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INTRODUCTION

Stunting is still a public health problem and is one of the current development priorities. Worldwide, it is reported that around 149.2 million or 22.0% of children under five are stunted (1). In Indonesia, although the prevalence of stunting shows a decreasing trend from 27.7% in 2019 to 24.1% in 2021, and 21.6% in 2022 (2), however this figure is still far from the 2024 Indonesia's medium term development plan (RPJMN) target of 14% (3). Likewise, the prevalence of stunting in Central Sulawesi Province, although it has decreased from 29.7% in 2021 to 28.2% in 2022, is still above the national average of only 21.6%. Likewise, in Donggala Regency, the prevalence of stunting increased from 29.5% in 2021 to 32.4% in Kemenkes RI (2). According to World Health Organization (WHO), the prevalence of stunting above 20% is still considered high as a serious and significant public health problem (4).

Stunting can have a negative impact on the quality of the generation and the country's economy. The long-term negative impact of stunted children on the future has been widely reported in various research results. Stunted children will experience a decrease in optimal cognitive development and intelligence (5–10). Children who experience stunting at 1 to 5 years are associated with poor health conditions at the age of 15 years (10). Stunted children will experience a loss of potential productivity when they become adults (10,11), even the country can lose per capita income estimated at 5-7% (12).

The determinants of stunting are multifactorial. The study in Palu revealed that the primary modifiable risk factor for child stunting was family income, with environmental sanitation, exclusive breastfeeding, and maternal age during pregnancy ranking as secondary risk factors (13). Other factors associated with stunting in children are low maternal education, increasing child age, male gender, poor household, prolonged breastfeeding, low birth weight, maternal age (<20 years), drinking water source (not improving), low maternal BMI (<18.5), diarrhea episodes, education and place of residence (rural) (14).

Various government efforts to accelerate stunting reduction have been carried out, both sensitive and specific interventions through a 5-pillar approach, namely political commitment, campaigns and education, program convergence, access to nutritious food, and program monitoring (3). Program convergence involves cross-sector collaboration. Convergence of cross-sector collaboration is reported to have a positive impact in certain areas (15).

However, in several areas' convergence activities have not been carried out well and optimally (16). In Donggala Regency, the implementation of the stunting prevention program has started since 2017 but has not been optimal (17) in terms of specific or sensitive interventions (18). The implementation of policies that address critical issues such as nutrition, maternal and child health services, the supervision of unhealthy snacks, and monitoring and evaluation will contribute to a reduction in the risk of stunting and an enhancement in the quality of life for children in Donggala district (19). Initial interviews with several regional apparatus organizations (OPD) in Donggala Regency revealed data that the coordination system was not running optimally, where each intervention was carried out separately and was not on target, there was no monitoring and evaluation from the Stunting Reduction Acceleration Team (TPPS). So an in-depth analysis is needed regarding policies, coordination, communication, division of tasks and commitment between OPDs. Therefore, this study intends to investigate the implementation of cross-sectoral collaboration in stunting prevention in Donggala Regency, so addressing the degree to which coordination, communication, task allocation, and government agency commitment help to make stunting interventions effective.

METHOD

This research uses qualitative methods to describe actual events related to the implementation of cross-sector collaboration in handling stunting in Donggala district. This research was conducted in Donggala Regency from May to October 2023. Data collection was carried out through in-depth interviews with 11 key informants consisting of the Regional Secretary, Head of the Regional Development Planning Agency, Head of the Village Community Empowerment Service, Head of the Health Service, Head of the Population Control Service and Family Planning, Head of the Education and Culture Service, Head of the Agriculture Service, Head of the Women's Empowerment and Child Protection Service, Head of the Social Service, Head of the Housing and Land Service and head of the Wani Health Center. Data analysis was carried out qualitatively with the following steps: data reduction, data presentation, and drawing conclusions.

Extensive review of current literature on stunting interventions and cross-sectoral cooperation helped the development of the interview questions to be sure they matched the study goals. To enhance the reliability of findings, data triangulation was employed by comparing responses across different informants and cross-referencing with relevant policy documents and reports. Additionally, to minimize potential biases, interviewers followed a structured

interview guide and maintained a neutral stance during data collection. Data were analyzed independently by multiple researchers, and any discrepancies in interpretation were resolved through discussion to ensure the validity and credibility of the findings.

RESULTS

The themes identified from the results of in-depth interviews with participants regarding handling stunting were Policy and implementation of handling stunting, coordination and cooperation between OPDs, monitoring and evaluation of activities of each OPD, division of job description tasks, and respondents' experience in handling stunting.

Policies and implementation for handling stunting

Most participants said the policies and implementation of handling stunting were as follows:

"The health service policy is the establishment of a nutrition bank, BOK channel, providing additional food (PMT) to children who are stunted, children aged 0-23 months and pregnant women (P2, P3, P4, P9)."
"Policy is pressed on the budget (P1, P8)".
"Monitoring and recovery for 90 days by cadres and nutrition workers (P9).
"Food insecurity intervention" (P3)
"Sanitation, provision of drinking water, construction of toilets, healthy housing" (P6)
"Interventions are still carried out individually by OPD" (P1, P5, P7)
"The program did not hit the target" (P1, P5, P6, P10)

Only one participant said there had been no implementation of stunting management in his agency.

"There is no implementation yet (P5)"

According to the report, different stunting intervention strategies exist but their application is still scattered. Some OPDs focus on specific interventions like nutrition programs and sanitation, but the lack of coordination leads to ineffective targeting and limited impact.

Coordination and cooperation between OPDs

Most participants said that coordination in handling stunting was carried out through stunting consultations.

"stunting consultations..(P1, P2, P3, P4, P5, P7)

However, coordination between OPDs is still not well established and optimal.

"There are still OPDs that run separately" (P1, P2, P4, P8, P10)
"Coordination is limited to being involved in the team" (P5)

Though stunting talks are carried out, OPD coordination remains poor. Many agencies operate independently, and participation is often limited to nominal involvement rather than active collaboration, reducing the effectiveness of integrated interventions.

Job Description

Regarding the division of tasks for each OPD, the participants' explanations showed that there was no strong understanding and awareness from the informants regarding their duties and responsibilities in the stunting handling acceleration team.

"There is no division of tasks yet" (P1, P, 3, P5, P8)
"The division of tasks is in the TPPS Decree" (P2, P4)
"Each OPD translates the job description" (P6, P7, P9, P10)

According to participants, the benchmarks for successful handling of stunting cases are in accordance with the main tasks and functions of each OPD as follows:

"Based on program achievements" (P1, P2, P3, P7, P8, P9, P10)
"No activities have been carried out yet" (P5 and P6)

OPDs lack clear job distribution; certain agencies are not aware of their particular responsibilities. While a formal decree exists outlining responsibilities, its interpretation varies, leading to inconsistencies in program execution and accountability

Monitoring and Evaluation

The implementation of monitoring and evaluation activities in handling stunting varies as expressed by participants as follows:

"Budget monitoring and evaluation" (P1, P10)

"program monitoring and evaluation" (P2, P4, P9)

There were also participants who said that no monitoring and evaluation had been carried out

"No monitoring and evaluation" (P3, P5, P6, P7, P8)

Indicators for successful handling of stunting cases are in accordance with the main tasks and functions of each OPD.

"Based on program achievements" (P1, P2, P3, P7, P8, P9, P10)

"No activities have been carried out yet" (P5 and P6)

Most participants said that for effective and efficient handling, budget support is needed. Apart from that, cross-sector collaboration is also needed, including involving the central statistical agency in evaluating data to make it more accurate.

"Need budget support" 9P2, P5, P7, P8, P9, P10)

"No additional cases" (P4)

"BPS data is needed so that the data is more accurate" (P1)

"Needs coordination of all OPDs involved" (P2)

The study exposes notable discrepancies in monitoring and assessment; some OPDs complete assessments depending on resources and programs while others hardly do any evaluations at all. This inconsistency hinders the ability to measure the effectiveness of stunting interventions and make data-driven improvements.

DISCUSSION

Policies and implementation for handling stunting consist of sensitive interventions and specific interventions. Specific interventions are carried out by the health sector, while sensitive interventions include providing access to clean water and home sanitation (20). The results of the interviews demonstrate that the policies and implementation of the stunting response have included various interventions, such as the establishment of nutrition banks, provision of supplementary food (PMT), 90-day monitoring, and improved sanitation and food security. These findings are in accordance with the recommendations of the WHO and UNICEF, which emphasize the importance of a multisectoral approach in stunting prevention. However, several challenges persist, including budgetary constraints (P1, P8), inadequate inter-sectoral coordination (P1, P5, P7), and suboptimal program effectiveness (P1, P5, P6, P10). Furthermore, there are institutions that have not implemented the stunting response program at all, indicating gaps in policy implementation in various regions.

Despite the implementation of various interventions, their effectiveness remains to be optimized to exert a more substantial impact on the reduction of stunting rates. The 90-day monitoring and recovery process conducted by cadres and nutrition workers, as outlined in "90-day monitoring and recovery by cadres and nutrition workers" on page 9, signifies a commendable initiative. However, the sustainability of the program is imperative to ensure a more pronounced effect. As Bhutta et al. (21) confirm that the success of nutrition programs depends on the continuity of interventions during the first 1,000 days of a child's life. Therefore, more integrated policies, adequate budget allocations, and inter-sectoral synergies need to be strengthened so that stunting prevention programs can run more effectively and equitably.

There are many factors that influence the incidence of stunting (22–24), therefore handling must also be carried out with a cross-sector collaborative approach. Cross-sector collaboration in handling stunting is one effective step (25). In Indonesia, cross-sector collaboration is one of the pillars in handling stunting among 5 other pillars, namely political commitment, campaigns and education, program convergence, access to nutritious food, and program monitoring (3). In several areas, cross-sector collaboration reflected in convergence actions has shown an influence on increasing the coverage of nutrition-sensitive intervention programs (15).

This finding is relevant to the results of the policy evaluation by Daswati & Ahsan (17), and it found support from the community, policy target groups, members, and candidates for legislative members for Presidential Regulation No. 72 of 2021 concerning Acceleration of Stunting Reduction. It is anticipated that the Donggala Regent will supervise all TPPS activities to ensure the appropriate allocation of stunting budget; TPPS is also expected to compile a written Standard Operating Procedure (SOP) that guides the implementation of tasks related to the

implementation of Presidential Regulation No. 72 of 2021 concerning the Acceleration of Stunting Reduction policies to ensure effective implementation of Convergence Action activities.

Teamwork, good and effective relationships and communication are one of the factors that influence the success of collaboration (26). Other factors that influence the success of cross-sector collaborative collaboration are 1. the right partners who work well together, 2. Commitment, 3. the same goals, vision and values, 4. clear goals for action, 5. approach inclusive by involving key partners at the start, 6. each partner has a sense of ownership and accountability, 7. effective leadership, structure, linkages and processes and 8. adequate resources. Apart from cooperation between government agencies, cooperation between health and non-health regional government officials is also needed. This is a prerequisite for the development of integrated policies that address complex public health problems (27).

Monitoring and evaluation of program implementation is very important to determine the success of an activity. monitoring and evaluation allows program managers to assess effectiveness and control which must be carried out continuously (27). The absence of monitoring and evaluation can result in the effectiveness of a program not being able to be assessed. Control over the implementation of activities also cannot be carried out. Poor supervision of cross-sectoral collaboration also occurs in other countries. For example, in rural Odisha, India, there was good collaboration at the state and district levels, there was joint planning and review meetings, training, and data sharing, but poor participation in intersectoral meetings and limited monitoring (28).

The findings of this study demonstrate that the coordination between Regional Apparatus Organizations (OPDs) in their efforts to accelerate the handling of stunting is not optimal. Although most participants indicated that coordination is conducted through stunting consultations, some of them highlighted that DPOs are operating independently. As one informant expressed, "There are still OPDs that function autonomously" (P1, P2, P4, P8, P10). This finding underscores the necessity for a comprehensive multisectoral approach to address stunting, as emphasized by Gillespie et al (29). They contend that the success of nutrition interventions is contingent on robust cross-sectoral coordination, given the multifaceted nature of stunting, which cuts across domains such as health, food, education, sanitation, and social sectors.

The results of this study underline important difficulties in stunting intervention efforts: imprecise task allocation, divided interventions by several groups, and poor coordination systems. These difficulties are in line with problems seen in other areas where effective cross-sectoral cooperation has been attained by well-defined governance structures, integrated monitoring mechanisms, and great political commitment. For example, Brazil and Bolivia have launched initiatives meant to decrease stunting. These initiatives employ different strategies. Stunted children under five years of age account for 7.0% of Brazilian children, less below the regional benchmark. Particularly in border areas like Assis Brasil, Acre (30). socioeconomic and environmental elements significantly contribute to stunting. Though the frequency of stunting remains very high at 16.1% (31,32), Bolivia's "Desnutrición Cero" program has lowered the incidence of child deaths from severe malnutrition from 25 to 9 per 100,000 children in five years. By means of legislative interventions and community-based initiatives, both nations have demonstrated notable achievements in addressing stunting. By means of comparison of the results of this study with best practices from other areas, one can gain important understanding of possible solutions for maximizing cross-sectoral cooperation in Donggala Regency. Local governments can strengthen their coordination systems, increase task clarity, and raise the efficiency of stunting intervention programs by learning from effective models.

Moreover, the allocation of responsibilities among DPOs remains ambiguous. Some respondents asserted that there was an absence of a definitive allocation of responsibilities, while others cited the TPPS Decree as a guiding principle. However, in practice, each DPO interprets their own job descriptions. The ambiguity surrounding the delineation of roles and responsibilities has been noted, with some participants asserting that a clear division of tasks remains elusive. In contrast, others have cited the TPPS Decree as a guiding principle. However, the ambiguity in task allocation has the potential to result in a lack of clarity regarding the scope of authority, which can complicate the evaluation of intervention effectiveness. Ruel et al (33) have demonstrated that a well-defined allocation of responsibilities within nutrition policy is paramount to avert the replication of programs and to ensure that each sector contributes effectively to the stunting response.

The implementation of stunting programs is further complicated by the challenges associated with monitoring and evaluation. While some participants acknowledged the implementation of monitoring and evaluation related to budgets and programs, a significant number acknowledged the absence of a systematic evaluation. For instance, one participant stated, "Monitoring and evaluation is done on the budget," while another noted, "Monitoring and evaluation is done on the program." However, some participants noted that no monitoring had been conducted, as

expressed by several informants: "There is no monitoring and evaluation yet" (P3, P5, P6, P7, P8). Bhutta et al (21) have underscored the pivotal role of monitoring and evaluation in the success of nutrition programs, as it can facilitate the identification of barriers to implementation and assess the effectiveness of implemented policies.

The prevailing indicators of success in addressing stunting primarily emphasize the implementation of programs devised by individual OPDs, rather than focusing on the tangible impact in reducing stunting rates. This discrepancy is exemplified by the statements of several participants, who asserted that success is gauged by program achievements (P1, P2, P3, P7, P8, P9, P10). Conversely, there are also OPDs that have not implemented any activities, as evidenced by their response, "No activities have been carried out yet" (P5, P6). An outcome-based approach is imperative to ensure the effectiveness of interventions. Sumarmi et al (34) underscore that success indicators should not only reflect program achievements but also prioritize the tangible impact in reducing stunting rates.

Finally, budget support and cross-sector coordination have been identified as crucial areas for enhancement. Participants have underscored the significance of adequate budget allocation, with informants asserting, "Budget support is essential" (P2, P5, P7, P8, P9, P10). Additionally, the necessity of accurate data from the Central Statistics Agency (BPS) has been highlighted, with participants emphasizing, "Accurate data from BPS is crucial" (P1). As Bhutta et al (21) underscored, the absence of adequate financial resources and accurate data hinders the efficacy of nutrition programs. Consequently, enhancing inter-OPD coordination, clarifying task division, fortifying monitoring and evaluation systems, and allocating budgets in a suitable manner are imperative to attain national objectives concerning the acceleration of stunting reduction.

Allocating significant resources to stunting prevention should be viewed as an investment. Studies project an 11% increase in income from preventing one-fifth of stunting (35). The benefits of stunting prevention are assumed to stem from increased productivity due to reduced malnutrition, productive earnings from preventable deaths, and household savings from avoidable diarrhea costs. This program expanded to six provinces over 5 years covering seven cohorts. With a discount rate of 5 percent, the benefit-cost ratio is 2.08 (36). Concerns that stunting prevention will be a waste of money are unnecessary as some forms of stunting prevention interventions have been shown to be cost-effective.

The integrated stunting prevention effort related to the stunting data management system needs to focus on efforts to obtain accurate and precise stunting data. The issue of data accuracy is sometimes a topic in stunting forums. The involvement of the Central Statistics Agency (BPS) in the stunting survey methodology, especially in sample selection, is necessary. So far, survey research from the Ministry of Health such as Riskesdas, SSGBI, PSG, SSGI, has involved BPS. Research conducted independently by local governments needs to be encouraged to involve BPS. In addition to being influenced by methodology, data accuracy is also influenced by the ability of the data collection team (enumerators). Of course, measuring the height of toddlers to determine whether or not a toddler is stunted requires good skills. Therefore, the data collection team needs to get adequate training so that they can be skilled when measuring height or length.

In line with WHO and UNICEF recommendations, the results underline the importance of a multi-sectoral strategy to stunting prevention. Structured cooperation, capacity-building for government personnel, and a centralized monitoring system help to solve important issues such budget restrictions, lack of linked policies, and uncertain roles distribution. By increasing community involvement and stakeholder participation, program sustainability and public awareness will also improve, thereby strengthening the efforts at stunting intervention in Donggala Regency.

Implications for Public Health

To meet Indonesia's national targets as well as the Sustainable Development Goals (SDGs), this study emphasizes how urgently more robust cross-sectoral cooperation in stunting prevention is needed. Though there is a countrywide drop, the rising stunting frequency in Donggala highlights government agency coordination, communication, and monitoring shortcomings. Effective interventions depend on addressing both health-specific and more general socio-environmental elements by means of adequately defined responsibilities and integrated policies.

Maintaining long-term impact requires community involvement beyond initiatives under government direction. Along with alliances with NGOs and the business sector, encouraging active engagement from local leaders, health workers, and parents can improve program reach and efficacy. Accelerating the elimination of stunting and enhancing child health outcomes would depend mostly on strengthening policy convergence, resource allocation, and monitoring systems.

Limitations and Cautions

This study admits some limits, including the small sample size and the qualitative character of the research, which can restrict the generalizability of the conclusions. Furthermore, influencing the interpretation of data could be possible prejudices in responder impressions. A mixed-methods strategy combining qualitative insights with quantitative data analysis and a bigger sample size is advised in order to improve the resilience of next study.

Beyond methodological restrictions, political and financial obstacles could potentially seriously hinder the efficient use of stunting preventive programs. Variations in local government commitment, bureaucratic inefficiencies, and changing political priorities could all impede cross-sectoral coordination. Furthermore, restricting the durability of stunting intervention initiatives could be insufficient budgets and conflicting financial priorities. More thorough investigation of these systematic obstacles in future studies will help to pinpoint ways to guarantee long-term program success and enhance policy execution. Advancement of more powerful and sustained stunting prevention initiatives depends on addressing structural as well as financial limitations.

Recommendations for Future Research

Building on the insights gained from this study, future research should focus on several critical areas that were identified as key challenges in stunting reduction. First, a more comprehensive analysis of the political and financial barriers to effective cross-sector collaboration is necessary. Understanding how budget constraints, resource allocation, and local political dynamics affect the coordination of stunting interventions will be essential for developing more sustainable and effective public health strategies.

Addressing the limitations identified in this study, such as the small sample size and the absence of quantitative data, will contribute to a more thorough understanding of how collaboration between sectors can be optimized. Further research should also consider exploring the role of local communities and their participation in stunting prevention efforts. Community involvement is often a crucial factor in ensuring that health interventions are not only implemented but sustained over time.

Additionally, the exploration of innovative digital tools for monitoring and evaluating stunting programs could unveil new dimensions of efficiency in program execution. In light of the global emphasis on data-driven public health initiatives, future studies should consider how integrating real-time data collection and analysis might improve the accuracy of program evaluations and foster more dynamic responses to emerging public health challenges.

CONCLUSION

Efforts to address stunting in Donggala Regency have been underway since 2017 but still require improvement in terms of coordination, monitoring and evaluation, and a better understanding of the roles and responsibilities of OPDs. Despite coordination efforts through stunting discussions, some OPDs are still implementing their programs independently without effective coordination, which needs to be improved. Monitoring and evaluation of stunting reduction activities are carried out with varying levels of intensity across different OPDs. Some OPDs have not yet conducted proper M&E, which could affect the effectiveness of the program. Job descriptions are included in the Regent's Decree on the Stunting Reduction Handling Team, but some OPDs do not yet fully understand their roles and responsibilities within the team. This can affect the efficiency of achieving program goals. The accuracy of stunting data must be ensured by involving the Central Statistics Agency (BPS) in surveys to guarantee data quality.

Strengthening cross-sectoral cooperation in stunting prevention calls a quick response. Policymakers have to create an integrated task force with well-defined duties, provide enough funding for monitoring and assessment, and improve local official capacity-building. Long-term viability depends on working with NGOs and community stakeholders. A strong determination to follow these guidelines can hasten the decrease of stunting rates and enhancement of child development in Donggala Regency.

AUTHOR'S CONTRIBUTION STATEMENT

Conceptualization: F.K., Ad., N., K.R., Methodology: F.K. Ad., Am., G.A., N., T.I.F., K.R. Formal analysis: F.K., Am., Writing—Original draft preparation: F.K., Ad., G.A., N., T.I.F., K.R. Writing—Review and editing: F.K. Ad., Am., G.A., N., K.R. Funding acquisition: F.K., Resources: F.K. Ad., Am., G.A., N., T.I.F., K.R. Supervision: F.K. Ad., Am., G.A., N., T.I.F., K.R. All authors have read and agreed to the published version of the manuscript.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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