

Intervensi Spesifik Stunting di Kabupaten Timor Tengah Selatan

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Abstrak: Stunting masih menjadi masalah kesehatan yang serius di Kabupaten Timor Tengah Selatan (TTS), Provinsi Nusa Tenggara Timur, kondisi ini sebagian besar disebabkan oleh keterbatasan akses terhadap gizi yang memadai serta terbatasnya layanan kesehatan yang berkualitas, sehingga menghambat optimalisasi tumbuh kembang anak. Meskipun pemerintah telah menetapkan kebijakan nasional melalui Peraturan Presiden Nomor 72 Tahun 2021 tentang Percepatan Penurunan Stunting, hambatan implementasi di tingkat daerah masih cukup besar. Penelitian ini bertujuan untuk menilai efektivitas intervensi gizi spesifik yang telah dilaksanakan di Kabupaten TTS serta mengidentifikasi kendala yang menghalangi pencapaian target penurunan stunting. Penelitian menggunakan pendekatan deskriptif dengan analisis data sekunder tahun 2023 yang diperoleh dari Dinas Kesehatan Kabupaten TTS melalui aplikasi e-PPGBM, e-Cohort, dan SiSTBM. Empat indikator utama dianalisis, yaitu cakupan konsumsi tablet tambah darah (TTD) pada ibu hamil, pemberian makanan tambahan (PMT) bagi ibu hamil dengan gizi kurang, cakupan imunisasi lengkap pada balita, serta kepatuhan rumah tangga terhadap perilaku hidup bersih dan sehat (PHBS). Hasil menunjukkan cakupan TTD sebesar 84,2%, PMT 80,6%, imunisasi lengkap 98%, dan kepatuhan PHBS hanya 45,3%. Cakupan imunisasi hampir mencapai target nasional, sementara PHBS dan beberapa indikator gizi

lainnya masih rendah. Hambatan utama yang ditemukan meliputi kunjungan antenatal yang tidak teratur, kerawanan pangan, keterbatasan ekonomi, serta rendahnya praktik perilaku hidup sehat di masyarakat. Penelitian ini menyimpulkan bahwa intervensi gizi di Kabupaten TTS menunjukkan capaian moderat, namun belum cukup signifikan dalam menurunkan angka stunting. Oleh karena itu, diperlukan penguatan kolaborasi lintas sektor, peningkatan kualitas pemantauan tumbuh kembang, revitalisasi peran Posyandu, serta peningkatan kesadaran masyarakat sebagai strategi kunci untuk mendukung percepatan penurunan stunting di masa mendatang.

Kata Kunci: Stunting, Intervensi gizi spesifik, Ibu hamil.

Abstract: Stunting remains a serious public health problem in South Central Timor (TTS) District, East Nusa Tenggara Province. This condition is largely caused by limited access to adequate nutrition and restricted availability of quality health services, which hinder optimal child growth and development. Although the government has established a national policy through Presidential Regulation No. 72 of 2021 on the Acceleration of Stunting Reduction, barriers to implementation at the local level remain considerable. This study aimed to assess the effectiveness of specific nutrition interventions carried out in TTS District and to identify challenges that prevent the achievement of stunting reduction targets. A descriptive approach was employed using secondary data from 2023, obtained from the TTS District Health Office through the e-PPGBM, e-Cohort, and SiSTBM systems. Four key indicators were analyzed: coverage of iron-folic acid (IFA) supplementation among pregnant women, provision of supplementary feeding (PMT) for undernourished pregnant women, complete immunization coverage among children under five, and household compliance with clean and healthy living behaviors (PHBS). The results showed IFA coverage of 84.2%, PMT 80.6%, complete immunization 98%, and PHBS compliance only 45.3%. While immunization coverage nearly reached the national target, PHBS and several nutrition-related indicators remained low. The main barriers identified included irregular antenatal visits, food insecurity, economic limitations, and

low adoption of healthy practices within communities. This study concludes that nutrition-specific interventions in TTS District have demonstrated moderate achievements but remain insufficient to significantly reduce stunting prevalence. Therefore, strengthening cross-sector collaboration, improving growth monitoring quality, revitalizing the role of Posyandu, and enhancing community awareness are crucial strategies to accelerate stunting reduction in the future.

Keywords: Stunting, specific nutrition interventions, pregnant women.

Introduction

Stunting defined as impaired growth and development caused by chronic malnutrition when a child's height-for-age falls more than two standard deviations below the World Health Organization (WHO) Child Growth Standards median-remains a pressing global health challenge, particularly in low- and middle-income countries (de Onis and Branca, 2016). In Indonesia, the national prevalence of stunting among children under five was reported at approximately 37% in recent years (Beal et al., 2018). However, despite this progress, the prevalence remained 21.6% in 2022 (Setiyawati et al., 2024), still above the World Health Organization's threshold for a public health problem.

East Nusa Tenggara (NTT) Province faces an even more severe burden, with stunting prevalence estimated at around 37.8% in 2021, the highest in the country (Andriani et al., 2025). Within the province, South Central Timor (TTS) Regency reports particularly alarming figures, underscoring the urgent need for targeted interventions. The 2023 Indonesia Health Survey recorded a stunting prevalence of 50.1% in the regency (Kemenkes RI, 2023), making it the second highest in the country and reflecting persistent challenges such as limited access to health services, widespread poverty, and geographic isolation.

To address the problem of stunting, the Indonesian government implemented specific interventions by issuing Presidential Regulation No. 72 of 2021 which focuses on adolescent girls, prospective brides, pregnant women, breastfeeding mothers, and infants (Indonesia, 2021). This intervention aims to reduce the prevalence of stunting by preventing adolescent girls from experiencing chronic energy deficiency, improving maternal nutrition, and preventing infants from experiencing stunting (Oddo et al., 2019). After 3 years of implementation, stunting in South Central Timor has begun to decline every year. For more details, see table 1.

Table 1. Stunting trend in South Central Timor Regency

Year	Prevalence of stunting (%)	Number of stunted toddlers
2021	32,1	14.258
2022	28,3	11.137
2023	22,3	8.924
2024	20,2	7.855

Source: e-PPGBM TTS, 2024

The table shows a consistent decline in the prevalence of stunting and the number of stunted toddlers in South Central Timor (TTS) Regency sourced from e-PPGBM from 2021 to 2024. The prevalence of stunting decreased from 32.1% in 2021 to 20.2% in 2024, meaning a total decline of 11.9 percentage points over four years. Likewise, the number of stunted

toddlers decreased significantly, from 14,258 in 2021 to 7,855 in 2024, or a total decline of 6,403 cases. This trend reflects progress in the implementation of specific nutrition interventions (Sari, et al., 2024). However, despite this increase, the prevalence in 2024 is still above the national target of 14%, indicating the need for further efforts to address stunting. Judging from the survey data conducted by the Indonesian Ministry of Health, stunting in TTS was 48.3% in 2021 (Kemenkes RI, 2021) and increased to 50.1% in 2023 (Kemenkes RI, 2023). Although the data is survey data, it cannot be denied that stunting in the area is still high, so further efforts are needed to improve stunting prevention programs.

The South Central Timor Regency Health Office has adopted various digital tools, such as e-PPGBM, e-Kohort, and SiSTBM, to monitor and evaluate intervention programs. Evidence shows that digital interventions play a critical role in improving maternal nutrition knowledge and influencing health-related behaviors, which in turn contribute to better child nutrition outcomes (Munawwaroh et al., 2022). In this context, the integration of digital platforms in South Central Timor has supported the improvement of key indicators, including iron supplement consumption among pregnant women, supplementary feeding for those with chronic energy deficiency, complete basic immunization for toddlers, and the promotion of clean and healthy living behaviors (PHBS). Strengthening the use of these digital systems is therefore expected to further enhance the effectiveness of local nutrition programs in reducing stunting. This aligns with findings from research in Indonesia, which highlight that the use of technology-based monitoring systems significantly improves data accuracy, supports timely decision-making, and strengthens the overall management of nutrition interventions (Hijrawati et al., 2021). Nevertheless, many indicators remain below the national target of 100%, highlighting persistent challenges such as irregular ANC attendance, limited availability of local food, and economic constraints. Given these challenges, this study aims to evaluate the effectiveness of specific nutrition interventions in TTS, assess program achievements, and identify barriers to success. The findings are expected to provide actionable insights for strengthening cross-sectoral coordination, enhancing community outreach, and supporting sustainable reductions in stunting prevalence in the region.

The specific interventions that have been implemented aim to reduce stunting prevalence by improving maternal nutrition, ensuring immunization coverage, and promoting clean and healthy living behaviors (PHBS). However, challenges such as irregular antenatal visits, limited local food resources, and economic constraints have hampered the full effectiveness of the program in South Central Timor Regency. Despite ongoing efforts, the effectiveness and challenges of specific nutrition interventions in TTS District have not been comprehensively evaluated. This study aims to fill this gap by analyzing program outcomes and identifying implementation barriers, as well as providing actionable recommendations to support sustainable stunting reduction.

Methodology

This study uses a descriptive research design to evaluate the effectiveness of specific nutritional interventions in efforts to reduce stunting in South Central Timor (TTS) Regency.

The research design focuses on analyzing program achievements and identifying challenges in implementing Presidential Regulation Number 72 of 2021 which includes 12 indicators. This study was conducted in TTS Regency, East Nusa Tenggara, Indonesia, an area with high stunting prevalence and limited access to health services.

The secondary data used were the 2023 TTS Health Office report collected through digital health platforms such as e-PPGBM (a system for monitoring the growth and nutritional status of toddlers), e-Kohort (a digital application for tracking maternal and child health data), SiSTBM (a platform for promoting community-based sanitation and hygiene practices). The data were analyzed descriptively to assess the coverage of each indicator relative to the national target of 100% and to identify key challenges in program implementation. The analysis included trends, gaps, and barriers affecting the effectiveness of specific nutrition interventions in reducing stunting prevalence. Data confidentiality was maintained throughout the research process, and ethical approval was obtained from the appropriate ethics review board.

Result

Based on the results of the study conducted on 12 specific intervention indicators carried out, there are several important findings that can be used as a reference to improve health programs in the community of South Central Timor Regency. This study focuses on the health of adolescent girls, pregnant women, and children, with the aim of improving their nutritional status and health. For more details, see table no 2.

Table 2. Targets and achievements of stunting interventions

Indicator	Target (%)	Achievement (%)	Problem	Solution
Adolescent girls receiving iron tablets (TTD)	70	89,2	Not all schools have implemented the program	Cross-sectoral effort: collaboration between the education department and the health department
Adolescent girls undergoing anemia screening	75	68,7	Lack of Hb meters and Hb strips	Health office and health centers to provide Hb meters and Hb strips in schools
Pregnant women consuming iron supplements	85	84,2	Irregular attendance of pregnant women for antenatal care (ANC) visits	Village midwives and cross-sectoral teams to conduct early detection of pregnant women
Pregnant women with chronic energy deficiency receiving supplementary feeding (PMT)	85%	80,6%	Limited availability and high cost of food ingredients in certain areas	Adjusting the menu to match the cost and availability of local food resources
Babies exclusively breastfed	50	83,1	Babies being cared for by grandmothers	Encourage breastfeeding through expressed breast milk

Malnourished toddlers receiving treatment	50	90,7	Parents sometimes refuse inpatient care for their children	Cross-sectoral effort: Introduce penalties for refusal
Toddlers monitored for growth	80	92	Toddlers not attending community health posts (Posyandu)	Community engagement through religious leaders and public figures
Malnourished toddlers receiving supplementary feeding (PMT)	85	83,3	Distance between target households and food preparation sites makes distribution challenging	Establish supplementary feeding kitchens closer to the targeted households
Children aged 6-23 months who receive complementary feeding	70	71,3	Poor quality food	Parent Education: Balanced nutrition in MP-ASI
Complete immunization for toddlers	100	98	Family economy affects transportation costs to health facilities	Sweeping of integrated health posts
Family Stop Open Defecation	100	98,1	Economic constraints in building proper latrines	Cross-sectoral effort: Funding for latrine construction
Implementation of Clean and Healthy Living Behavior (PHBS)	80	45,3	Does not meet all 10 indicators	Conduct education and outreach on Clean and Healthy Living Behavior (PHBS)

Based on the table above, we can see the targets and achievements of the 12 indicators studied. The first indicator regarding adolescent girls who received iron supplementation tablets showed good achievement, namely 89.2% of the target of 70%. However, the challenge faced is that not all schools have implemented this program. Therefore, collaborative efforts are needed between the education office and the health office to ensure that this program can be implemented evenly in all schools. In addition, schools should implement iron supplementation tablet programs in schools at both the junior and senior high school levels because adolescent girls are prospective mothers who are prone to anemia (Suharni and Muthmainah, 2022). The second indicator is adolescent girls who undergo anemia screening, the achievement only reached 68.7% of the target of 75%. This is due to the limited hemoglobin (Hb) measuring instruments and Hb strips in schools. The proposed

solution is for the health office and health centers to work with schools to provide the tools and materials needed to support anemia screening (Yudina and Fayasari, 2020).

In terms of preventing pregnant women from experiencing chronic energy deficiency, the indicator of iron tablet consumption shows an achievement of 84.2%, almost approaching the target of 85%. However, the problem that arises is the irregularity of pregnant women's attendance at antenatal care (ANC) visits (Tasuib et al., 2022). Overall, pregnant women often check their health in the third trimester. To overcome this, an active role is needed from village midwives and village officials to carry out early detection of pregnant women so that pregnant women can check their health earlier (Sormin, 2023). For the Indicator on pregnant women with chronic energy deficiency who received additional food reached 80.6%, slightly below the target of 85%. Limited availability and high cost of food ingredients in some areas are obstacles. Therefore, adjusting the food menu with relatively low cost and availability of local resources is very necessary.

Stunting occurs when babies do not get enough breast milk from their mothers. Referring to the indicator of babies who get exclusive breast milk, the achievement only reaches 83.1%, the problem found in the field is the role of caregiving which is often taken over by grandmothers when mothers go to work (Suharni and Muthmainah, 2022). Education about the importance of breastfeeding and the use of expressed breast milk needs to be improved to support good breastfeeding practices. Treatment should also be given to infants when they are recorded as being at risk of stunting. Indicators regarding toddlers receiving treatment for malnutrition show very good results with 90.7% of the target of 50%. However, sometimes parents refuse inpatient care for their children. Therefore, several villages in South Central Timor punish parents who forbid their children from being treated. Therefore, it is not surprising that the achievement in this indicator exceeds the target.

Toddler growth monitoring reached 92%, indicating that many toddlers were examined at the integrated health post. The challenge found was that there were still toddlers who did not attend the integrated health post. The involvement of community leaders and religious leaders in inviting parents to bring their children to the integrated health post is very important so that this problem can be reduced. For the indicator of toddlers receiving additional food reaching 83.3%, the distance between the target household and the location of the food provision is an obstacle to distribution. Therefore, the establishment of additional food kitchens closer to target households needs to be considered. For children aged 6-23 months who received complementary foods, the achievement reached 71.3%. Poor food quality is still a major problem so that education for parents about balanced nutrition in complementary foods for breast milk (MP-ASI) is very necessary.

Basic immunization in toddlers should be 100% achieved. However, if seen from the complete immunization indicator for toddlers, the results do not reach 100%, which is 98%. Family economic factors are the main obstacle that affects transportation costs to health facilities. The strengthening integrated health posts through sweeping activities is very important to facilitate access to health services. Regarding the cessation of open defecation

practices reaching 98,1%, although there are still economic obstacles in building decent toilets. Cross-sector efforts to fund toilet construction are highly recommended to achieve the target of 100%. For the last indicator, Implementation of Clean and Healthy Living Behavior (PHBS), it is only 45.3%. The community's habit is only washing hands but they think that they have done 10 PHBS indicators. Therefore, efforts to educate the community about the importance of PHBS need to be increased so that the community implements clean and healthy living behavior.

Overall, out of 12 specific intervention indicators, 5 indicators have met the target and 7 indicators have not met the target. The various challenges that exist require serious attention and collaborative action from various parties to achieve the goal of reducing stunting rates in South Central Timor Regency.

Discussion

Specific interventions in TTS District have not been fully effective in preventing stunting.

This finding is in line with a study in Naitae Village, Kupang, which revealed that the implementation of specific nutrition interventions was hindered by limited resources, irregular program coverage, and low community participation, resulting in suboptimal outcomes in reducing stunting prevalence (Laikingis, 2025). Similarly, evidence from the Baduta Cluster Randomized Controlled Trial in East Java showed that only integrated and behavior-focused interventions produced measurable improvements in infant and young child feeding practices and growth outcomes, suggesting that fragmented or poorly implemented specific interventions alone may not be sufficient to significantly reduce stunting (Fahmida et al., 2020).

In line with these findings, although stunting rates in TTS District have shown a gradual decline each year, assessments based on the 12 key indicators reveal that progress remains limited and still falls short of the national target. These results highlight the need for tailored, context-specific, and evidence-based strategies to effectively reduce stunting, particularly in regions facing complex socio-economic and cultural challenges. Strengthening community engagement and improving multisectoral collaboration are critical to sustaining these positive impacts and reducing stunting prevalence in the future. The South Central Timor Regency Health Office has created several programs to support specific interventions and reduce stunting rates. One of them is in the Decree of the Head of the Health Office Number 81 of 2022 concerning GASELOR (Sine et al., 2024). This program aims to increase the participation of fathers in posyandu so that children's health is not only focused on the mother, but fathers also know the health experienced by their children. In Indonesia, a patriarchal culture is still prevalent, leading to unequal roles between men and women. Although fathers and mothers in Indonesia are married, the role of fathers in caring for children is often ignored (Ashari, 2018). This can have an impact on the health of the child. Even children are often considered the responsibility of the mother, not the father (Nurjanah et al., 2023). Through this problem, the South Central Timor Health Office

launched the GASELOR program which aims to eliminate this culture and make fathers more active in caring for children.



Source: Dinkes TTS.

Figure 1. GASELOR Program

Father involvement in the form of active participation is closely related to child development (Kiling-bunga et al., 2016). The existence of the GASELOR program is expected to bring changes to fathers so that they can actively participate in the integrated health post and then this can have a positive impact on children's health. This program has had a significant impact, as evidenced by reducing the stunting rate from 28.3% in 2022 to 22.3% in 2023. When the program was first implemented, fathers in TTS regency were very enthusiastic to join. This is because of the full attention of the village government. If there are fathers who are not present at the integrated health post, they are punished so that people tend to be afraid and follow the program.

Besides the GASELOR program implemented in South Central Regency, another program that is also implemented is the provision of iron supplements (TTD) to adolescent girls who have dropped out of school, which is also implemented to reduce the rate of anemia in adolescent girls and produce prospective brides who do not have chronic energy deficiencies so that the children born are not at risk of stunting. In South Central Timor district, it is common for adolescent to often not complete their education. The main reason is economic factors, because the majority of the community are farmers and cannot afford to pay for their children to go to school (Knyartilu and Neonufa, 2021). This gap has made the government work hard to overcome it.



Figure 1. Program for providing iron supplements (TTD) to school dropout girls.

Referring to the regulation of the regent of South Central Timor number 37 of 2019 chapter 8 states that every adolescent girl and woman of childbearing age is required to receive a minimum of one iron supplements for one week and one tablet every day during menstruation (Kabupaten Timor Tengah Selatan, 2019). Based on these problems, the South Central Timor Regency Health Office created a program to provide iron supplements for adolescent girls who dropped out of school. This program is implemented in collaboration with religious sectors such as churches so that the provision of iron supplements is carried out in the church environment every Sunday. This is done so that young women who do not receive iron supplements at school because they do not attend school can avoid anemia. This program of providing iron supplements for school dropouts has been carried out since 2019. The level of adolescent girl involvement is quite high in this program because of the obligation from church leaders. Such faith-based delivery mechanisms are echoed in the literature as effective means of promoting adolescent health programming. For instance, a school-based iron supplementation program in West Java achieved significant reductions in anemia through multisectoral collaboration, political commitment, and robust monitoring systems (WIFAS Project) (Roche et al., 2018).

Conclusion

Specific nutrition interventions in South Central Timor (TTS) Regency have demonstrated some progress but remain insufficient to effectively reduce stunting prevalence. Persistent challenges—such as irregular antenatal care visits, limited access to diverse local food, economic constraints, and low compliance with clean and healthy living behaviors (PHBS) have constrained program outcomes, leaving several key indicators below national targets. These findings imply that while existing efforts are beneficial, current interventions are not yet robust enough to address the multifactorial causes of stunting. Strengthening cross-sectoral coordination, improving the quality of growth monitoring, revitalizing the role of Posyandu, and expanding community involvement are therefore essential to foster sustainable behavioral change.

For policymakers, the results highlight the importance of integrating nutrition-specific interventions with social protection and food security programs to ensure broader coverage. From a research perspective, future studies should apply longitudinal and mixed-

methods approaches to better capture behavioral determinants, evaluate cost-effectiveness, and identify culturally appropriate strategies to enhance compliance.

Practical recommendations include strengthening the capacity of health workers, establishing stronger follow-up systems for antenatal care, promoting household food diversification using local resources, and designing community-based health education programs that actively involve families. Innovative initiatives already in place-such as GASELOR (Fathers as Nutrition Counselors Movement) to increase paternal engagement in child nutrition counseling, and the iron supplementation program (IFA) for school dropout girls to prevent anemia and reduce intergenerational risks of stunting-should be scaled up and reinforced. By addressing these gaps, local governments and stakeholders can accelerate progress toward achieving national and global stunting reduction targets.

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