



Gianyar District's Achievement in Stunting Reduction: Lessons Learned from a Community-Driven Integrated Nutrition Intervention

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ARTICLE INFO

Keywords: Health Programs, Integrated Nutrition Intervention, Stunting

Received : 5 May

Revised : 23 June

Accepted: 23 July

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ABSTRACT

Stunting is a key indicator of chronic malnutrition in children, marked by a height-for-age measurement below WHO growth standards. It is caused by inadequate nutrient intake, recurrent infections, and lack of environmental stimulation during the critical first 1,000 days of life. This condition has serious long-term consequences for cognitive development, educational attainment, and economic productivity. Addressing stunting is a major priority in Indonesia's 2020–2024 National Medium-Term Development Plan (RPJMN) and aligns with the second Sustainable Development Goal (SDG) of eliminating all forms of malnutrition. This study aims to analyze Gianyar District's achievement in reducing stunting by evaluating its regional nutrition policies and interventions. Using a qualitative descriptive method with document analysis and secondary data from 2013 to 2024, the research highlights a substantial decline in stunting prevalence in Gianyar – from 40.99% in 2013 to 5.4% in 2024 – placing it among the districts with the lowest stunting rates in Indonesia and exceeding the national target. This success is attributed to effective nutrition-specific and nutrition-sensitive interventions, strong multisectoral collaboration, and community participation through customary village laws (awig-awig). The integration of digital health tools and partnerships with academic institutions further enhanced program effectiveness. The study concludes that Gianyar's model offers valuable lessons for replication in other high-burden areas and supports the development of a sustainable, data-driven national stunting reduction strategy

INTRODUCTION

Stunting is a primary indicator of chronic nutritional status in children, characterized by a height-for-age that falls below the World Health Organization (WHO) growth standards. This condition arises from inadequate nutrient intake, recurrent infections, and limited environmental stimulation during the critical window of the first 1,000 days of life (Habimana et al., 2023; WHO, 2013). Stunting has profound consequences for human capital development, including cognitive impairments, delayed motor development, and diminished academic and economic potential in adulthood. Tackling stunting has become a central indicator within Indonesia's 2020–2024 National Medium-Term Development Plan (RPJMN) and aligns with the second goal of the Sustainable Development Goals (SDGs): to end hunger and all forms of malnutrition.

According to the 2013 Indonesian Basic Health Research (Riskesdas), the prevalence of stunting in Bali Province stood at 32.6%, reflecting a significant burden of chronic undernutrition in the region. However, within a decade, Bali achieved a substantial decline in stunting prevalence, reaching 8.6% in 2024 (Kementerian Kesehatan RI, 2024)—a figure that not only surpasses the RPJMN target of 14% but also falls below the WHO public health threshold. The most notable contribution to this achievement came from Gianyar District, which demonstrated a remarkable transformation by reducing stunting prevalence from 40.99% in 2013 to only 5.4% in 2024. This places Gianyar among the districts with the lowest stunting prevalence in Indonesia.

LITERATURE REVIEW

Gianyar's success is attributed to a combination of specific and sensitive nutrition interventions, strong multisectoral coordination, and enhanced community participation, including the use of culturally rooted mechanisms such as *awig-awig* (customary village regulations). Additionally, the integration of digital technologies in health service delivery and collaboration with academic institutions played a critical role in strengthening local nutrition programs.

This study aims to elaborate on Gianyar District's achievement in stunting reduction by analyzing its regional nutrition policies and programs, and to explore the potential for replicating these best practices in other high-burden areas. The findings are expected to contribute to the development of a context-specific, data-driven, and sustainable national strategy for accelerating stunting reduction.

METHODOLOGY

This study employed a qualitative descriptive approach with a document study method. The document study was conducted in Gianyar Regency, Bali. Data sources were obtained from official documents published by the Gianyar Regency Health Office, including the Gianyar Health Profile for 2023 and 2024. The data were then analyzed through three stages: data reduction, data presentation, and conclusion drawing.

RESULT AND DISCUSSION

Health Programs Coverage in Gianyar Regency

1. Antenatal Care Visits (ANC K4)

Antenatal Care (ANC) refers to the healthcare services provided to pregnant women to monitor the health of both the mother and fetus during pregnancy. ANC K4 denotes a minimum of four antenatal visits during pregnancy, in accordance with the standards set by the World Health Organization (WHO) and Indonesia's Ministry of Health Regulation No. 97 of 2014.

ANC K4 is crucial for screening pregnancy complications, delivering nutritional interventions such as iron and folic acid supplementation (IFA), tetanus toxoid (TT) immunization, and providing nutrition education. According to WHO guidelines (2016), four visits are the minimum standard, encompassing assessments of blood pressure, body weight, fundal height, fetal presentation, and maternal nutritional status (Kementerian Kesehatan RI, 2014; Simbolon et al., 2021).

The coverage of a minimum of four antenatal care visits (ANC K4) in Gianyar District demonstrated an upward trend from 2023 to 2024. In 2023, the proportion of pregnant women completing four ANC visits was recorded at 72.3%, increasing to 78.5% in 2024. This improvement reflects better access to and utilization of maternal health services in accordance with the standards set by the Ministry of Health and WHO.

ANC K4 serves as a vital mechanism for the early detection of pregnancy-related problems, maternal nutritional status, and the delivery of specific nutrition interventions, including IFA supplementation and the promotion of healthy lifestyle behaviors. Previous studies have shown that inadequate ANC is significantly associated with an increased risk of stunting in children. Despite the progress, this achievement remains below the national Minimum Service Standards (SPM) target of 100%. Therefore, further efforts are required to ensure that all pregnant women receive complete and timely antenatal care throughout their pregnancy.

2. Neonatal Visits

Neonatal visits are healthcare services provided to infants aged 0–28 days, conducted at least three times: within the first 48 hours after birth, between days 3–7, and between days 8–28 (Kemenkes RI, 2014). These visits aim to detect and manage early neonatal complications such as hypothermia, infections, breastfeeding difficulties, and to monitor body weight and umbilical cord condition. Neonatal care is directly associated with reduced risk of neonatal mortality and stunting (Putri et al., 2024; Titaley et al., 2019).

The neonatal visit coverage in Gianyar District showed a significant improvement during the observed period. In 2023, 79.6% of newborns received the recommended neonatal visits, which increased sharply to 100% in 2024. This indicates that all newborns in Gianyar received the complete set of neonatal health services within the first 28 days of life.

Neonatal visits include postnatal health assessments, initial immunizations, early infection detection, and monitoring of early growth

patterns. Achieving 100% coverage represents a major success in reaching this highly vulnerable age group, which is at elevated risk of undernutrition and infection. Moreover, these services function as a critical component of early detection and intervention systems for growth faltering during infancy.

3. Infant Health Services

Infant health services refer to routine health care provided to infants aged 29 days to 11 months, with a minimum of four visits per year. These services include complete basic immunizations, early childhood developmental screening and stimulation (SDIDTK), and parental counseling (Permenkes No 39 Tahun 2016, n.d.)

The primary objective of these services is to enable early detection of growth and developmental disorders. Regular monitoring encompasses anthropometric assessments and evaluations of motor, language, and socio-emotional development. Such services are considered a critical strategy for stunting prevention (Leroy et al., 2025).

In contrast to improvements observed in neonatal care, the coverage of infant health services in Gianyar District experienced a decline over the past year. In 2023, 80.5% of infants aged 29 days to 11 months received the recommended services, but this figure dropped to 73.5% in 2024. This reduction signals potential discontinuities in post-neonatal service delivery, possibly due to demand-side or supply-side constraints.

Infant health services encompass complete immunization, growth and development monitoring through SDIDTK, and parental education on feeding practices and responsive caregiving. The decline in service coverage poses a risk to early identification of growth and developmental delays. Therefore, further investigation is needed to explore the contributing factors, such as increased workload among health personnel, logistical limitations, or shifts in community health-seeking behaviors in the post-pandemic context.

4. Vitamin A Supplementation in Children Under Five

Vitamin A supplementation refers to the provision of high-dose vitamin A capsules to children aged 6–59 months, administered twice a year—in February and August. Vitamin A plays a crucial role in maintaining epithelial integrity, enhancing immune function, and supporting bone growth and development (WHO, 2011). Deficiency in vitamin A increases susceptibility to infections such as acute respiratory infections (ARI) and diarrhea, which are recognized as indirect contributors to stunting.

Unlike other service indicators, the coverage of high-dose vitamin A supplementation for children aged 6–59 months in Gianyar District has consistently reached 100% in both 2023 and 2024. This stability indicates that supplementation efforts have successfully reached the entire target population of under-five children.

Vitamin A is essential for supporting bone growth, preserving immunity, and preventing infections that contribute to chronic undernutrition. This intervention is also part of the World Health Organization's global strategies for preventing stunting and childhood morbidity (WHO, 2011). The consistency in coverage reflects the effectiveness of logistic distribution systems and community mobilization mechanisms. However, maintaining the quality of

implementation and ensuring the continuity of parental education remain important aspects for sustaining long-term impact.

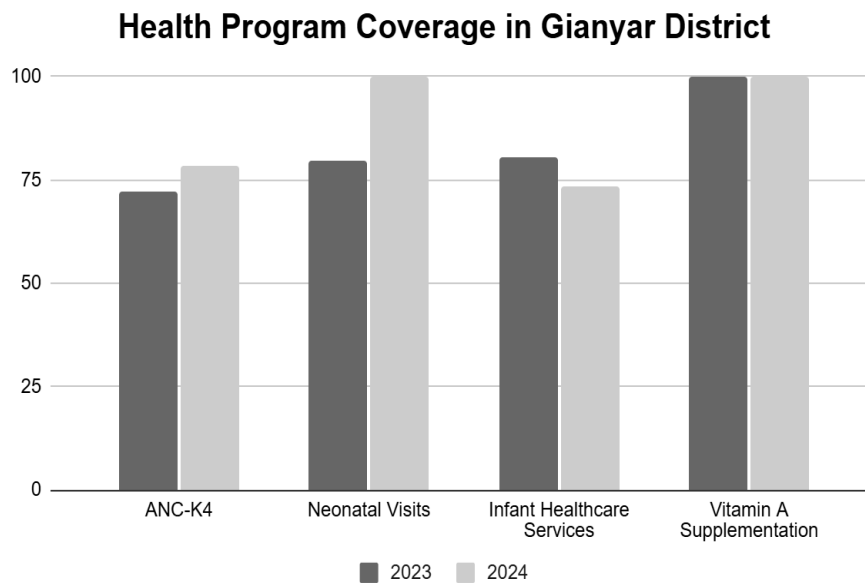


Figure 1 Health Program Coverage in Gianyar District

Stunting Reduction Program in Gianyar Regency

The prevalence of stunting in Gianyar District was recorded at 6.3% in 2023 and declined to 5.4% in 2024. This reduction indicates an improvement in the nutritional status of children under five, in line with the local government's efforts to enhance the quality of human resources and health services in pursuit of the "Zero Stunting" target.

Gianyar District implements stunting prevention programs through both nutrition-specific and nutrition-sensitive interventions, aligned with national guidelines and strategies set by the central government (Pemerintah Republik Indonesia, 2021). The acceleration of stunting reduction in Gianyar is carried out collaboratively, involving leadership from local government heads, relevant regional offices (OPDs), communities, and other stakeholders.

In addition to implementing centrally directed programs, Gianyar District has also developed local innovations aimed at improving public health outcomes and addressing nutritional and health issues, including stunting. The following are locally driven programs initiated by Gianyar District as part of its efforts to reduce the incidence of stunting. The stunting reduction acceleration in Gianyar has been pursued through the following initiatives:

1. Gianyar Aman Health Assistance Program

The Gianyar Aman Health Assistance Program is a local initiative providing free medical treatment for all residents of Gianyar District, applicable at government hospitals as well as community health centers (puskesmas). Additionally, the Gianyar District Government has partnered with four major hospitals in Bali Province to deliver free healthcare services to Gianyar residents.

The district also developed a digital health service application called "Gianyarku Aman", which facilitates public access to health services by offering

features such as online queue numbers, real-time room availability, outpatient clinic schedules, surgery timetables, and physician directories—thereby promoting transparency and efficiency in service delivery. This program is expected to ensure optimal access to healthcare for all Gianyar residents, contributing to the prevention and early treatment of health problems, including stunting.

2. Community-Based Health Monitors for Posyandu Assistance

Community-Based Health Monitors for Posyandu Assistance are support personnel assigned to assist posyandu (integrated health post) activities in each village, in addition to the regular posyandu cadres. These personnel are carefully selected by the Gianyar District Government to ensure that only capable, knowledgeable, and responsive individuals are appointed to oversee and assist posyandu activities within the community. Their role is to ensure the effective implementation of services and to help improve public health outcomes. These monitors are required to possess information technology (IT) skills to enhance the speed and accuracy of posyandu operations, particularly in data collection, community education, and information dissemination.

3. Puspa Aman (Pusat Pangan Alami Mandiri Asri dan Nyaman)

Puspa Aman is a program initiated by the Department of Food Security, Marine Affairs, and Fisheries (DKPKP) of Gianyar District. The program aims to accelerate food diversification at the community level while simultaneously improving household nutrition. Through Puspa Aman, the government encourages community members to utilize home gardens or underutilized land to produce food sources that can help meet their families' nutritional needs and generate additional household income.

A study conducted by Laksmi et al., (2024), examined the design and implementation of the Puspa Aman program at the village level, particularly in Singapadu Tengah Village, Gianyar. The study revealed that the village gardens developed under this program served not only as sources of nutritious food but were also designed to be both aesthetically pleasing and productive. Their management involved direct participation from community members and the village government, making the gardens a collective effort to enhance local food security. The study further emphasized that careful planning is essential to ensure that the use of household yards effectively contributes to family nutrition and supports community-level stunting prevention efforts.

The Puspa Aman program is expected to improve community dietary patterns by promoting food consumption that is more diverse, nutritious, balanced, and safe. By fulfilling nutritional needs and addressing food insecurity, the program contributes to reducing the incidence of stunting, particularly among children under five.

4. Aku Hatinya PKK (Amalkan dan Kukuhkan Halaman Asri Teratur)

Aku Hatinya PKK program is a village-level initiative that works in synergy with the Puspa Aman program. This initiative involves the distribution of plant seedlings to households for cultivation in their home gardens. By providing these seedlings, the program aims to reduce household expenditures, improve family welfare, and enhance household food security.

Seedlings distributed through the program include a variety of vegetables, fruits, sweet potatoes, and chili peppers. It is expected that through home-based food production, families will have easier access to nutritious food sources, thereby contributing to improved dietary quality and supporting broader food and nutrition security objectives.

5. Awig-awig (Customary Regulations) in Traditional Villages Related to Prenatal and Postnatal Health Programs

Awig-awig refers to customary regulations established by traditional villages to govern community life based on local customary law, separate from the administrative village system which adheres to national legal frameworks. In Gianyar District, these customary rules include specific mandates requiring families with pregnant women to participate in maternal and child health programs during both prenatal and postnatal periods. This includes activities such as posyandu visits, antenatal care (ANC), immunization, and medically assisted childbirth.

By integrating these health-related obligations into the awig-awig of traditional villages, the policy aims to foster community compliance with essential health programs, thereby improving maternal and child health outcomes and reducing the risk of nutrition-related and health-related problems.

6. Growth and Development Workshop for Early Childhood Education (PAUD) Teachers

Early Childhood Education (PAUD) in Indonesia comprises various service programs, including Taman Penitipan Anak (daycare), Kelompok Bermain (playgroup), and Taman Kanak-Kanak (kindergarten), which serve children from birth up to six years of age (Mahmudah & Yuliati, 2021). Many stunting cases in children under five are associated with a lack of parental awareness regarding their child's growth status. Early detection is essential for timely intervention, and one of the most effective methods is through anthropometric measurements. PAUD institutions can serve as strategic settings for stunting screening among young children.

7. Capacity Building for Community Health Workers and Mothers of Young Children

According to the latest guidelines from WHO and UNICEF regarding complementary feeding for children aged 6–23 months, nutritious complementary feeding is one of the key interventions recommended starting at six months of age, coinciding with the end of exclusive breastfeeding (Pujiningsih et al., 2024). More specifically, regarding the use of local or indigenous foods, a recent study in rural Indonesian communities by (Marlinton & Sulistyarningsih, 2024) found that using locally available and affordable food ingredients can be an effective strategy for stunting prevention. The study also emphasized the importance of cultural adaptation of local food practices in complementary feeding to improve acceptance and the sustainability of nutrition interventions (Marlinton & Sulistyarningsih, 2024). One of the factors influencing the provision of local complementary foods is maternal knowledge about complementary feeding. To ensure high-quality and adequate complementary foods, health workers—including posyandu cadres—play a key role in providing information

to mothers, families, and caregivers about appropriate feeding practices for children under two years of age. Therefore, the Gianyar District Government has provided training for community health workers and mothers of young children, as well as counseling on complementary feeding and monitoring of child growth.

8. Collaboration with Higher Education Institutions

The collaboration with higher education institutions, in this case with Udayana University, was established to study and research the causes and prevention of stunting so that the stunting rate in Gianyar District can continue to decline and future occurrences can be prevented.

CONCLUSIONS AND RECOMMENDATIONS

The significant reduction in stunting prevalence in Gianyar District – from 40.99% in 2013 to 5.4% in 2024 – reflects the successful integration of specific and sensitive nutrition interventions, cross-sectoral collaboration, and the utilization of local wisdom and digital technology. These efforts included the expansion of basic health service coverage, such as antenatal care (ANC), neonatal visits, and vitamin A supplementation, as well as community engagement through innovative programs such as Gianyar Aman Health Assistance, Puspa Aman, and Awig-awig (customary regulations) in traditional villages. The involvement of posyandu support personnel, early childhood educators, and higher education institutions further reinforced a comprehensive and sustainable stunting prevention strategy.

While several indicators showed outstanding achievements—such as 100% coverage of neonatal visits and vitamin A supplementation—challenges remain, particularly in the declining coverage of infant health services. This underscores the need to strengthen the continuity of post-neonatal services and ensure rigorous monitoring of program implementation at the field level.

This study highlights the importance of integrated, contextualized, and participatory approaches in addressing stunting and recommends the replication of Gianyar's good practices as a national model for accelerating stunting reduction efforts.

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