



Early Detection of Stunting in Children Aged 0-60 Months in Lamanu Village Kabawo District, Muna Regency

Fajirin Alam Syah^{1*)} Eke Mahendra²⁾

La Ode Muhammad Harysabarno³⁾, Nurul Hidayah⁴⁾

^{1,3,4)} Muhammadiyah Institute of Business and Health Technology, West Muna barat

²⁾ Paramata Polytechnic, Raha

Email: Fajrinalamsyah01@gmail.com

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ABSTRACT

Stunting is a condition of growth failure resulting from chronic undernutrition during the first 1.000 Days of Life, with long term consequences for children's physical growth, cognitive development, and productivity. Based on the Indonesian Nutritional Status Survey (SSGI) 2024, the national stunting prevalence has declined to 19,8%; however, Southeast Sulawesi recorded an increase of 1.3% during the period 2018–2023. This gap is compounded by the absence of periodic anthropometric monitoring and low attendance of children under five at Integrated Health Posts (Posyandu), resulting in most cases of growth disorders being identified only at advanced stages. This community service activity aimed to conduct early detection of stunting among children aged 0-60 months in Lamanu Village, Kabawo District, Muna Regency. Anthropometric measurements of length/height for age were conducted on 39 children under five in accordance with Minister of Health Regulation No. 2 of 2020 and WHO standards. Results indicated that 69,23% of children had normal nutritional status, while 30,77% were classified as stunted, comprising 23,08% in the Stunted category and 7.69% in the Severely Stunted category. A critical finding emerged in the 0-12 month age group, where 50% were classified as Severely Stunted. Female children exhibited a higher proportion of Severely Stunted cases (5,13%) compared to males (2,56%). The stunting prevalence in Lamanu Village exceeds both the national target of 14% established under Presidential Regulation No.72 of 2021 and the national average of SSGI 2024. Integrated nutritional interventions, parental education, and routine monitoring at Posyandu are the primary recommendations.

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INTRODUCTION

Stunting is a condition of growth failure affecting children under five years of age, caused by chronic nutritional deficiency during the first 1.000 Days of Life (1.000 HPK), resulting in children being excessively short for their age. Children classified as stunted and severely stunted are those whose length for age or height for age falls below the WHO-Multicentre Growth Reference Study (MGRS) standard (Kementerian Kesehatan RI, 2023). This condition affects not only physical growth but also cognitive

development, motor capacity, and adult productivity (Simamora et al., 2022; Maulida et al., 2025). Globally, stunting remains the most significant nutritional challenge in developing countries. In Indonesia, the acceleration of stunting reduction has been established as a national priority agenda, regulated through Presidential Regulation Number 72 of 2021, with a target prevalence of 14% by 2024 and 14,2% by 2029 in accordance with the National Medium Term Development Plan (RPJMN) 2020-2024. Based on the Indonesian Health Survey (SKI) 2023, the national stunting prevalence was recorded at 21,5%, equivalent to 1 in every 5 children under five in Indonesia. The SSGI 2024 data recorded a decline to 19.8%, surpassing the annual RPJMN target of 20,1% and successfully preventing approximately 337.000 new stunting cases (Kementerian Kesehatan RI, 2025).

Southeast Sulawesi Province has garnered particular attention as the only province that experienced an increase in stunting prevalence during the 2018–2023 period, amounting to 1.3% (Ministry of Health RI, 2023). Muna Regency recorded a stunting prevalence of 31,3% based on SSGI 2022, placing Muna Regency well above the national prevalence of 2022 (21,6%) and considerably high within Southeast Sulawesi (BKKBN, 2023).

Preventive interventions significantly reduce morbidity and financial burdens on healthcare systems. The primary focus of this approach is risk factor mitigation and the protection of vulnerable populations to maintain optimal public health status (Astuti et al., 2018; Sari et al., 2025). Preventive efforts encompass a range of actions undertaken to prevent health problems, accelerate early detection of health issues, and reduce their impact before they become more serious. Stunted children exhibit higher mortality rates from various causes and an increased burden of disease. Stunting adversely affects physical work performance, and mental and intellectual functioning (Purwanti & Mildiana, 2021; Maulida et al., 2025).

Early detection through standardized anthropometric measurements represents a fundamental step in stunting management efforts. Regular growth monitoring enables health workers and parents to identify growth deviations at an early stage, allowing appropriate interventions to be administered promptly before long-term consequences occur. Based on the aforementioned background, this community service activity was carried out with the objectives of: (1) conducting early detection of stunting in children aged 0-60 months through standardized anthropometric measurements, and (2) enhancing parental knowledge regarding children's nutritional status and evidence-based stunting prevention strategies.

METHOD

The method used is quantitative by calculating the average before and after the intervention in Lamanu Village, Kabawo District, Muna Regency, Southeast Sulawesi Province, in January 2026. The activity partnered directly with the local health post (*Posyandu*) cadres of Lamanu Village. The target population comprised 39 children under five aged 0–60 months residing in the village, with parental informed consent obtained prior to participation. This activity was implemented through a community empowerment framework, encompassing nutritional status screening and anthropometric measurements (LAZ/HAZ) in accordance with the Minister of Health Regulation No. 2 of 2020 and WHO standards.

Nutritional status was assessed using the Length for Age or Height for Age indicator in accordance with the Minister of Health of the Republic of Indonesia Regulation Number



2 of 2020 on Child Anthropometric Standards and the WHO Child Growth Standard growth curve (0-60 months). A calibrated stadiometer was used as the measurement instrument. Length measurements were conducted in the supine position for children aged 0-23 months, while height was measured in the standing position for children aged 24-60 months

Measurement results were converted to Z-score values using the WHO Anthropometry application and categorized as: Severely Stunted (Z-score < -3 SD), Stunted (-3 SD $\leq$ Z-score < -2 SD), Normal (-2 SD $\leq$ Z-score $\leq +3$ SD), and Tall (Z-score $> +3$ SD). Data were analyzed descriptively using frequency distribution.

RESULT

Coordination Stage

The initial stage of the activity began with coordination between the Lamanu Village Government and the nutrition program officer from the Kabawo Public Health Center to align the technical plans for early stunting detection. Through this coordination, the implementation schedule at the local integrated health post (Posyandu) was established, and logistics specifically standardized anthropometric equipment were prepared. Furthermore, a consolidation meeting was held with integrated health post cadres to facilitate the mobilization of parents with children aged 0-60 months in the area. This coordination process proceeded systematically with full support from village officials

Anthropometric Screening Implementation Stage

The screening stage was attended by 39 children under five accompanied by their parents, following the completion of informed consent forms. The *Posyandu* cadres, assisted by the community service team, performed length measurements for infants aged 0–24 months using a length board and height measurements for children over 24 months using a stadiometer. All measurement data were subsequently converted into length/height-for-age indices based on WHO standards and the Minister of Health Regulation No. 2 of 2020 to identify children within the stunting category (Figure 1) Documentation of the early stunting detection activity is presented in the figure below





Respondent Characteristics

The respondents in this community service activity were all infants aged 0-60 months present during the anthropometric measurement in Lamanu Village, Kabawo District, Muna Regency. A total of 39 children under five were successfully recorded. The distribution of respondents by age group and sex is presented in Table 1.

Table 1. Distribution of Respondents by Demographic Characteristics

No	Characteristics of Respondents	Category	N	%
1	Age (month)	0 – 12	4	10,3
		13 – 24	5	12,8
		25 – 36	13	33,3
		37 – 48	10	25,6
		49 – 60	7	18
2	Sex	Male	21	56,41
		Female	18	43,59

Source: Primary data, 2026

Based on Table 1, the distribution of respondents by age group indicates that the highest proportion was observed in the 25-36 month age group, comprising 13 children (33,3%), followed by the 37-48 month group with 10 children (25.6%), the 49-60 month group with 7 children (18,0%), the 13-24 month group with 5 children (12,8%), and the 0-12 month group with 4 children (10.3%). Regarding sex characteristics, male respondents constituted a larger proportion than females, accounting for 21 children (56,41%) and 18 children (43,59%), respectively.

**Nutritional Status Based on Height for Age Z-score Indicator.****Table 2. Distribution of Nutritional Status of Children Under Five Based on Height for Age Z-score Indicator**

No	Nutritional Status	n	%
1	Severely Stunted	3	7,69
2	Stunted	9	23,08
3	Normal	27	69,23
	Total	39	100,0

Source: Primary data, 2026

Based on Table 2, anthropometric measurements conducted on 39 children under five revealed that the majority (69,23%) had Normal nutritional status. Nevertheless, the stunting prevalence identified was considerably significant at 30,77%, comprising 9 children (23,08%) in the Stunted category and 3 children (7,69%) in the Severely Stunted category.

Distribution of Stunting based on Age**Table 3. Nutritional Status based on Age**

Age (Month)	Severely Stunted		Stunted		Normal	
	N	%	N	%	N	%
0–12	2	5,13	1	2,56	1	2,56
13–24	0	0	1	2,56	4	10,26
25–36	0	0	5	12,82	8	20,51
37–48	1	2,56	1	2,56	8	20,51
49–60	0	0	1	2,56	6	15,38
Total	3	7,69	9	23,08	27	69,23

Source: Primary data, 2026

Based on Table 3, the majority of respondents had Normal nutritional status, comprising 27 children (69,23%); however, the overall stunting prevalence remained considerably high at 30,77% (combined Severely Stunted and Stunted categories). Specifically, the 0-12-month age group exhibited the highest vulnerability in the Severely Stunted category (5,13%), while the 25-6 month age group recorded the greatest number of children in the Stunted category, comprising 5 children (12,82%). These findings indicate that despite most children growing normally, more intensive nutritional interventions are required, particularly during the early growth period up to three years of age, to reduce stunting rates in the area.

Distribution of Stunting based Sex

Table 4. Nutritional Status based on Sex

No	Nutritional Status	Male		Female	
		N	%	N	%
1	Severely Stunted	1	2,56	2	5,13
2	Stunted	5	12,82	4	10,26
3	Normal	15	38,46	12	30,77
	Total	21	53,85	18	46,15

Source: Primary data, 2026

Based on table 4, regarding nutritional status based on sex, it is evident that the majority of respondents in both groups were in the Normal category, with 15 male children (38.46%) and 12 female children (30,77%). Nevertheless, a significant prevalence of nutritional problems in the form of stunting (Stunted and Severely Stunted) was still observed in both groups. The Stunted category was more prevalent among males (12,82%) compared to females (10,26%), whereas the Severely Stunted category was higher among female children (5,13%) compared to males (2,56%). Overall, no respondents fell into the Tall category, indicating that the nutritional status distribution in this population tends to center on the Normal condition, with a distribution of linear growth disorder risks that warrants further attention for both sexes.

DISCUSSION

Nutritional status assessment using the Length for Age or Height for Age indicator revealed that 69,23% of children under five had normal nutritional status, 23,08% were in the Stunted category, and 7,69% were in the Severely Stunted category. No children were identified in the Tall category. Consequently, nearly one third of the total children examined experienced stunting of varying degrees of severity.

These findings affirm that early detection through standardized anthropometric measurements represents a fundamental step in stunting management. Regular growth monitoring enables health workers and parents to identify growth deviations at an early stage, so that appropriate interventions can be provided promptly before long-term consequences occur (Kementrian Kesehatan RI, 2020). Qualitative findings further confirmed that the majority of growth disorder cases were only identified at advanced stages due to the absence of periodic anthropometric monitoring.

The most critical finding was identified in the 0-12 month age group. Of the 4 children in this group, 2 children (5,13%) were in the Severely Stunted category, 1 child (2,56%) was in the Stunted category, and only 1 child (2,56%) had Normal status. This indicates that 75% of infants aged 0–12 months in Lamanu Village were affected by stunting a highly alarming figure. The infant period represents the most intensive phase of brain and vital organ growth acceleration; therefore, nutritional deficiencies during this phase have permanent consequences that are difficult to correct at a later stage (Simamora et al., 2022). This is consistent with the findings of Sartika et al. (2021), which affirmed that the prenatal and early postnatal period (0-11 months) constitutes a key determinant of stunting occurrence. Nutritional deficiency during this period results in permanent consequences as it coincides with the acceleration phase of children's brain and vital organ development.



In the 25-36-month age group, the highest concentration of Stunted cases was identified, comprising 5 children (12,82%), while 8 children (20,51%) had Normal status. This finding indicates that nutritional problems originating since the infant period persist into the toddler age and have not received adequate management. The 13-24 month and 37-48 month age groups each exhibited 1 stunted child, while the 49-60 month group recorded 1 Stunted child. This pattern indicates that without effective early interventions, stunting tends to persist into the preschool age.

These findings reinforce the importance of the concept of the first 1.000 Days of Life as the primary window of opportunity for stunting prevention. Interventions initiated from pregnancy through maternal nutrition, fetal monitoring, and lactation preparation, and continued consistently until the child reaches 2 years of age, have proven more effective in preventing stunting compared to interventions implemented thereafter.

Analysis of nutritional status by sex indicated that the majority of respondents in both groups were in the Normal category 15 male children (38,46%) and 12 female children (30,77%). However, stunting prevalence was still identified in both sex groups. The Stunted category was more prevalent among males (12,82%) compared to females (10,26%). Conversely, the Severely Stunted category was higher among female children (5,13%) compared to males (2,56%).

This pattern is consistent with the national nutritional improvement trends recorded in SSGI 2024, where Indonesia's stunting prevalence declined from 21,5% to 19,8% (Ministry of Health RI, 2025). Nevertheless, the continued occurrence of stunting in both sex groups in these findings reinforces the results of the Indonesian Health Survey (SKI) 2023, which stated that approximately 1 in 5 children under five remains affected by stunting.

This is also consistent with the study by Has et al. (2025), which utilized SKI 2023 data and affirmed that the etiology of stunting is multifactorial, involving family, environmental, social, and cultural factors that affect children of both sexes simultaneously. Thompson et al. (2024), in a study of infants and children aged 0-23 months, concluded that stunting rates remain high in both males and females and tend to worsen throughout infancy. Consequently, improvements in feeding practices, caregiving environments, and household resources are required for all children regardless of sex.

These findings affirm that nutritional interventions must not be gender-biased. Stunting prevention programs must target all children under five comprehensively through routine growth monitoring at the local Integrated Health Post (Posyandu), improving the quality of complementary feeding (MP-ASI) rich in animal protein, and comprehensive parenting education for parents. Early detection of children classified as Stunted and Severely Stunted is critical to prevent long-term consequences such as cognitive decline and susceptibility to degenerative diseases in adulthood.

CONCLUSION

This community service activity has successfully addressed the primary objective of the program, which was to conduct early stunting detection in order to accurately map the nutritional status of toddlers in the partner area. Based on the screening and

anthropometric measurements obtained, it was determined that the total prevalence of stunting in the region remains at a critical level, reaching 30.77% (comprising 23.08% classified as stunted and 7.69% as severely stunted). Through this early detection activity, the distribution of vulnerability could be mapped specifically, revealing that the 0–12-month age group exhibited the highest rate of severe stunting (5.13%), while the 25–36-month age group contained the largest number of children in the stunted category (12.82%)

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