

THE EFFECTIVENESS OF THE SUPPLEMENTARY FEEDING PROGRAM IN PREVENTING STUNTING AMONG CHILDREN UNDER FIVE IN LUHAK NAN DUO SUBDISTRICT PASAMAN BARAT REGENCY

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Abstrak

Masalah stunting masih menjadi tantangan besar dalam upaya meningkatkan kualitas kesehatan anak di Indonesia. Penelitian ini bertujuan untuk mengetahui efektivitas Program Pemberian Makanan Tambahan (PMT) dalam pencegahan stunting pada balita di Kecamatan Luhak Nan Duo, Kabupaten Pasaman Barat. Metode penelitian yang digunakan adalah deskriptif kuantitatif dengan pengumpulan data melalui angket kepada ibu balita dan studi pustaka. Hasil penelitian menunjukkan bahwa pelaksanaan PMT dinilai sudah efektif berdasarkan indikator ketepatan sasaran, kualitas makanan, keterlibatan kader, serta dukungan orang tua. Namun, masih terdapat kendala berupa keterbatasan variasi menu, kurangnya monitoring, serta partisipasi masyarakat yang belum optimal. Kesimpulannya, PMT berkontribusi dalam upaya pencegahan stunting, meskipun perlu penguatan pada aspek keberagaman menu, pelatihan kader, serta peningkatan keterlibatan orang tua dan lintas sektor.

Kata kunci: *Stunting, PMT, Gizi Balita, Puskesmas*

Abstract

Stunting remains a major challenge in efforts to improve child health quality in Indonesia. This study aims to determine the effectiveness of the Supplementary Feeding Program (PMT) in preventing stunting among toddlers in Luhak Nan Duo District, West Pasaman Regency. The research method used is descriptive quantitative, with data collected through questionnaires distributed to mothers of toddlers and literature review. The findings indicate that the implementation of PMT is considered effective based on indicators such as target accuracy, food quality, involvement of health cadres, and parental

support. However, there are still challenges, including limited menu variation, lack of monitoring, and suboptimal community participation. In conclusion, PMT contributes to stunting prevention efforts, although improvements are needed in menu diversity, cadre training, and increased involvement of parents and cross-sector collaboration.

Key words: *Stunting, PMT, Toddler Nutrition, Health Center*

INTRODUCTION

Nutritional status is a crucial factor in the development of human resources, as it directly affects children's health and growth. Children under five and pregnant women are categorized as vulnerable groups who are highly susceptible to nutritional problems and therefore require special attention. Nutritional status itself is the result of nutrient intake, absorption, and utilization, which is reflected in an individual's physical condition (Hidayah, Munawarah & Jumaidi, 2024).

Nutritional problems among children under five in Indonesia remain relatively high. According to the 2022 Indonesian Nutritional Status Survey (SSGI), the prevalence of wasting among children under five reached 7.7%, while stunting was recorded at 21.6% (Kementerian Kesehatan RI, 2022). These findings are supported by the Total Diet Survey (2014), which reported that 48.9% of children under five had insufficient energy intake and 6.8% had severely insufficient intake, while 23.6% had low protein consumption. The dietary diversity of young children is also inadequate, with only 52.5% of toddlers consuming a sufficiently diverse diet (SSGI, 2021). Additionally, high rates of infections such as diarrhea (9.8%) and acute respiratory infections (24.1%) further exacerbate nutritional conditions among children under five (Kementerian Kesehatan RI, 2021).

The determinants of poor nutritional status among young children can be classified into direct and indirect causes. Direct causes include inadequate dietary intake and infectious diseases, while indirect causes involve parenting practices, parental knowledge, access to health services, and socioeconomic conditions (Dirjen Kesmas, 2023).

As part of national efforts to address these issues, the government issued Presidential Regulation No. 72 of 2021 on the Acceleration of Stunting Reduction, which targets a reduction in stunting prevalence to 14% by 2024. This regulation outlines a national strategy emphasizing strengthened nutrition programs, public health measures, and specific interventions for vulnerable populations (Perpres RI No. 72 Tahun 2021).

One of the key programs implemented to improve children's nutritional status is the Supplementary Feeding Program (PMT). This program aims to enhance the nutritional status of young children, particularly those experiencing undernutrition, inadequate weight gain, or those at risk of stunting. Supplementary feeding may include complete meals or snacks made from local food sources and is accompanied by nutrition education for parents of young children (Kemenkes RI, 2011; Dirjen Kesmas, 2023).

The PMT program is implemented through a multi-level system, from the national

government down to community health posts (posyandu), with posyandu cadres serving as frontline implementers. These cadres act as intermediaries between health workers and the community and play a critical role in monitoring child growth (Rosyida dkk., 2024).

However, the implementation of PMT in various regions still faces challenges. According to data from UPT Puskesmas Ophir in Luhak Nan Duo Subdistrict, Pasaman Barat Regency, 1,980 children under five are routinely monitored. Among them, 229 children were identified as undernourished, yet only 80 were able to receive PMT due to budget limitations. This situation highlights a significant gap between needs and available resources.

Given these challenges, research is needed to assess the effectiveness of the Supplementary Feeding Program (PMT) in preventing stunting among children under five, particularly in Luhak Nan Duo Subdistrict, Pasaman Barat Regency.

METHODS

This study was conducted in Luhak Nan Duo Subdistrict, Pasaman Barat Regency, using a quantitative research method grounded in the positivist paradigm, employing research instruments, and analyzing data statistically to test the formulated hypotheses (Nurhamijah & Puansah, 2025; Pane et al., 2025; Puansah, Parapat, et al., 2023; Puansah & Ritonga, 2021; Siregar et al., 2025). The population in this study consisted of all mothers of children under five, or parents who received the Supplementary Feeding Program (PMT), totaling 80 individuals. This number was also used as the research sample, in accordance with the principle that the entire population may be taken as the sample when the population size is fewer than 100 individuals.

RESULTS AND DISCUSSION

Effectiveness

Effectiveness fundamentally refers to the extent to which objectives or expected outcomes are achieved. This term differs from efficiency, which focuses more on the comparison between costs and results. Effectiveness relates to the degree to which an organization's outputs, policies, and procedures are able to accomplish predetermined goals (Pakei, 2016). In the context of public organizations, an activity is considered effective when it significantly enhances the organization's ability to provide services to the community.

Mardiasmo (2017) states that effectiveness is a measure of whether an organization has successfully achieved its objectives. The greater the contribution of program outputs toward attaining these objectives, the more effective the organizational work process becomes. Therefore, effectiveness requires clearly defined goals, appropriate strategies, well-prepared planning, and continuous outcome assessment (Siagian, 2008).

The measurement of effectiveness can be carried out using several indicators, including program success, target achievement, satisfaction levels, input–output comparison, and the extent to which overall objectives are attained (Mutiarin & Zaenuddin, 2014). Furthermore, effectiveness is influenced by various factors such as organizational characteristics (structure

and technology), environmental characteristics (internal and external), job characteristics, and the management policies and practices implemented (Umam, 2012). In practice, effectiveness is also supported by consistent program implementation, adequate facilities and infrastructure, and an educational and constructive supervision system.

Supplementary Feeding Program

The Supplementary Feeding Program (PMT) is a nutritional intervention program that provides safe and high-quality food containing nutrients tailored to the needs of the target groups, particularly undernourished children under five, children whose weight has not increased, and those at risk of stunting. PMT is not intended to replace main meals, but rather to serve as an additional intake that helps meet nutritional needs while providing education to parents on balanced and nutritious eating practices (Kementerian Kesehatan RI, 2011).

The target groups of PMT include undernourished children under five, children with low or stagnant weight gain, and thin children categorized by weight-for-length/height indicators below -2 SD (Kementerian Kesehatan RI, 2011). The implementation of PMT generally involves three stages: planning (identifying target beneficiaries and developing balanced menus based on local food sources), implementation (providing complete meals and snacks according to schedule), and monitoring (regular measurements of weight and height to assess changes in nutritional status).

Locally sourced PMT emphasizes several key components, including community empowerment, the utilization of locally available food ingredients, nutrition and health education, and collaboration among various stakeholders (government, community, and other partners) to ensure program sustainability (Kementerian Kesehatan RI, 2011; Dirjen Kesmas, 2023). Structurally, the distribution of PMT follows a hierarchical system from the national government to district/city health offices, then to community health centers (puskesmas), community health posts (posyandu), villages or nagari, and finally to posyandu cadres who deliver the food directly to beneficiaries.

The benefits of PMT for young children include improving nutritional status, preventing and addressing undernutrition, supporting physical and cognitive development, and strengthening the immune system. The overall objectives of the program are to reduce stunting rates, increase access to nutritious foods, and educate parents about the importance of balanced nutrition (Kementerian Kesehatan RI, 2011).

Children Under Five

Children under five (balita) are a group of children aged 0–5 years who are in the most rapid phase of growth and development within the human life cycle. During this critical period, nutritional and health disturbances can result in long-term consequences that affect quality of life in the future (Andriani & Wirjatmadi, 2012). Generally, children under five are categorized into infants (0–11 months), toddlers (1–2 years), and preschool-aged children (>2–5 years).

Children aged 1–3 years tend to be “passive consumers,” receiving food entirely from their parents, with relatively high energy needs but limited stomach capacity. As a result, they require a dietary pattern consisting of small but frequent meals. Meanwhile, children aged 3–5 years begin to act as “active consumers,” selecting foods based on their preferences. Therefore, parents must guide them to ensure that balanced and nutritious eating patterns are maintained (Septiasari, 2012).

Stunting

Stunting is a chronic malnutrition condition in children characterized by height that falls below the standard for their age, resulting from prolonged inadequate nutrient intake and often accompanied by recurrent infections. Stunting may begin as early as the fetal stage and continue until a child reaches two years of age (Kementerian Kesehatan RI, 2016). This condition affects physical growth, cognitive development, immune response, and productivity in adulthood (Rahmadhita, 2020) (Puansah, Pulungan, et al., 2023; Puansya et al., 2024).

In Pasaman Barat Regency, stunting is a significant public health problem, leading to its designation as a priority intervention area. According to the Indonesian Health Survey (SKI), the prevalence of stunting in the regency reached 35.5% in 2022 and declined to 29.7% in 2023–2024, in line with various intervention efforts involving the government, community leaders, and multiple sectors.

The causes of stunting are multifactorial, including inadequate maternal and child nutrient intake, inappropriate feeding practices, recurrent infections, poor sanitation and environmental conditions, as well as poverty and household food insecurity (Kementerian Kesehatan RI, 2016). Common signs of stunting include height significantly below age standards, slow growth, difficulty gaining weight, suboptimal cognitive development, frequent illness, and other developmental delays.

Stunting prevention efforts are implemented from the pre-conception period through the child's first two years of life and include proper caregiving practices, fulfillment of balanced nutrition, exclusive breastfeeding and appropriate complementary feeding (MP-ASI), improved sanitation and environmental conditions, and timely treatment when the child becomes ill (Rahmadhita, 2020). The Supplementary Feeding Program (PMT) serves as one of the specific interventions aimed at improving the nutritional status of young children as part of the broader strategy to reduce stunting.

Posyandu and Posyandu Cadres

The *posyandu* (integrated health post) is a form of community-based health effort (UKBM) managed *from, by, and for* the community with support from health professionals. Posyandu functions as a platform for basic health services, including monitoring child growth and development, immunization, nutrition counseling, and the implementation of the Supplementary Feeding Program (PMT). In the context of PMT, posyandu plays a role in

preventing and addressing stunting, ensuring age-appropriate growth, improving nutritional status, and mobilizing community participation.

Posyandu cadres are community members selected to voluntarily lead posyandu activities. Their tasks include informing the community about posyandu schedules, preparing equipment, registering attendees, weighing children and recording data in the Growth Monitoring Card (KMS), providing brief counseling to mothers, conducting home visits, and assisting in the distribution of PMT to eligible children. The activeness and capacity of cadres are crucial to the success of the PMT program and stunting prevention efforts at the community level.

This study was conducted in Luhak Nan Duo Subdistrict, Pasaman Barat Regency, which covers an area of 174.21 km² and has a population of 45,797 people residing in 9 *nagari* and 31 *orong*. The population is predominantly Muslim (approximately 98%) with the majority working as laborers and farmers, while civil servants and members of the armed forces/police account for only a small proportion of the workforce.

Educational infrastructure in the subdistrict is considered adequate, ranging from basic to higher education, with 49 formal schools and 432 Madrasah Diniyah Awaliyah (MDA) units. In the health sector, services are centered at Ophir Health Center (non-inpatient), supported by four auxiliary health centers (Pustu) and fourteen village health posts (Poskesdes). A total of 83 health personnel serve the area, including physicians, nurses, midwives, nutritionists, sanitarians, and administrative staff, employed under civil servant, contract, and honorary statuses.

There are 1,980 children under five in Luhak Nan Duo Subdistrict, of whom 229 have been identified as experiencing nutritional problems (stunting/undernutrition). However, only 80 children received interventions from the Supplementary Feeding Program (PMT), indicating that program coverage has not yet reached all children in need.

The PMT program is implemented annually for a duration of 90 days (January–March), providing meals consisting of rice, protein sources, vegetables, fruits, and milk. The implementation involves village midwives and posyandu cadres through posyandu activities and home visits. Despite this, several challenges persist, including limited menu variation, uneven parental involvement, and suboptimal posyandu participation due to inadequate training and facilities for cadres.

A total of 80 respondents participated in this study, the majority of whom were mothers of children receiving PMT. Based on gender, women comprised 58% (46 respondents), while men accounted for 42% (34 respondents). In terms of age, the largest group was 30–39 years (39%), followed by 20–29 years (19%), 40–44 years (10%), and 45–50 years (12%). This indicates that the respondents were predominantly within the productive adult age range. Based on occupation, more than half of the respondents were housewives (56.25%), while the remaining worked as farm laborers (22.5%) and construction workers (21.25%). This suggests that most respondents belonged to economically dependent groups relying on daily wages, which may influence their ability to meet household nutritional needs.

Respondents' Perceptions of the Effectiveness of the PMT Program (Variable X)

The results of the questionnaire indicate that most respondents perceived the implementation of the PMT program as regular and on schedule, that the supplementary food provided was nutritious and appropriate to children's needs, and that health workers routinely monitored child growth. For nearly all statement items, respondents predominantly selected "agree," such as:

1. PMT is implemented according to schedule: 53.75% agreed.
2. The supplementary food is nutritious and appropriate for children's needs: 55% agreed.
3. Child growth is monitored regularly: 65% agreed.
4. Targeting of PMT beneficiaries is fair and transparent: 58.75% agreed.
5. PMT has a positive impact on child growth: 73.75% agreed.

The overall score tabulation shows a range of 22–33, with most responses falling into the "moderate" and "fairly high" categories. In general, the effectiveness variable of the PMT program (X) is categorized as moderate, indicating that the program is considered sufficiently effective by most respondents, although improvements are still needed.

Respondents' Perceptions of Stunting Prevention (Variable Y)

For variable Y (stunting prevention), respondents also provided predominantly positive assessments:

1. Children's growth improved after receiving PMT: 68.75% agreed.
2. Children's weight increased after receiving PMT: 91.25% agreed.
3. Children appeared healthier: 83.75% agreed.
4. Parents gained new nutritional knowledge from the posyandu: 68.75% agreed.
5. Nutrition education provided by cadres increased parental awareness: 87.5% agreed.
6. PMT helped families meet their children's nutritional needs: 61.25% agreed.

The distribution of total scores for variable Y ranged from 22 to 30, with most respondents falling within the "fairly low" to "fairly high" categories, and overall classified as moderate. This indicates that the PMT program has contributed to stunting prevention; however, its impact has not yet reached optimal levels.

The Relationship Between PMT Effectiveness and Stunting Prevention

The results of the Product Moment correlation test show a value of $r = 0.52$, which falls within the category of a moderate relationship. This indicates that the more effectively the PMT Program is implemented, the better the efforts in preventing stunting among children under five in Luhak Nan Duo Subdistrict. The significance test yielded a t-calculated value of 5.40, which is greater than the t-table value of 1.664 ($\alpha = 0.05$; $df = 78$), demonstrating that the relationship is statistically significant.

The determination test produced a value of $D = 27.04\%$, meaning that the effectiveness of the PMT Program contributes 27.04% to the variation in stunting reduction, while the remaining 72.96% is influenced by other factors outside the program, such as parenting practices, sanitation, socioeconomic conditions, parental education, and access to health services.

CONCLUSION

The findings of this study indicate that the implementation of the Supplementary Feeding Program (PMT) in Luhak Nan Duo Subdistrict has been effective due to the collaboration between community health centers (puskesmas), posyandu cadres, and the support of the local government. Statistical testing shows that the correlation coefficient r_{xy} (0.52) is greater than the critical value r_{table} (0.220) at a 5% significance level, thereby confirming that the research hypothesis is accepted.

The effectiveness of the PMT program is demonstrated through program indicators, target accuracy, and beneficiary satisfaction. The results reveal a moderate positive relationship between PMT effectiveness and the reduction of stunting ($r = 0.52$; $R^2 = 27.04\%$), indicating that the more effectively the PMT program is implemented, the greater its contribution to accelerating stunting reduction. Nevertheless, a substantial proportion of stunting reduction is still influenced by other factors such as parenting practices, sanitation, economic conditions, and parental education levels.

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