

Effectiveness of Locally Sourced Food Supplements in Improving Nutritional Status of Undernourished Toddlers

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ABSTRACT

Malnutrition in toddlers remains a significant challenge in Indonesia. This study evaluates the effectiveness of locally sourced supplementary feeding (PMT) in improving the nutritional status of 55 toddlers at Puskesmas 1 Negara over one month. Using a retrospective descriptive method and paired T-Test analysis, results showed significant increases in both weight and height. Nutritional status improved from 78.2% undernourished and 21.8% severely undernourished to 41.8% normal, 52.7% undernourished, and 5.5% severely undernourished. The PMT program proved effective in addressing toddler malnutrition at the community level

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Key Messages:

- Supplementary feeding (PMT) with locally sourced foods significantly improved the weight, height, and nutritional status of toddlers with malnutrition at Puskesmas 1 Negara
- Before the intervention, 78.2% of toddlers were undernourished and 21.8% severely undernourished, which improved post-intervention to 41.8% normal and only 5.5% severely undernourished..

INTRODUCTION

Malnutrition in early childhood remains a pressing public health challenge in many developing countries, including Indonesia. Nutritional deficiencies during the critical period of the first five years of life can lead to impaired cognitive development and suboptimal physical growth. Long-term consequences may include a heightened risk of non-communicable diseases in adulthood, underscoring the importance of early nutritional intervention.

In Indonesia, the prevalence of malnutrition encompasses a range of conditions such as underweight, stunting, wasting, and even excessive weight. Data from the Ministry of Health (2025) show that Bali has achieved relative success in reducing the rates of stunting (8.7%), wasting (2.8%), and underweight (7.0%) among children. This progress is largely attributed to targeted local interventions, including the use of locally sourced food, community empowerment through family and posyandu programs, and increased public awareness about balanced nutrition.

To align with the Sustainable Development Goals (SDGs), especially Goal 2 which targets the elimination of hunger and malnutrition by 2030, the Indonesian government has prioritized the reduction of childhood stunting. One notable intervention is the provision of Supplementary Feeding (PMT), as outlined in Minister of Health Regulation No. 39 of 2016. PMT is designed to bridge dietary gaps in energy and essential nutrients for toddlers, with the goal of improving their overall nutritional status.

Puskesmas 1 Negara, a primary health center in Jembrana, Bali, is actively implementing PMT based on local food resources to address these issues. With a service area covering six villages and 29 subdistricts, the health center recorded 2,317 measured toddlers as of January 2025, with 2.8% underweight, 2.9% stunted, and 1.6% wasted. Evaluating the effectiveness of this program is essential for guiding nutrition policies and ensuring that interventions are both impactful and tailored to the community's needs.

CASE DESCRIPTION

This study employed a **comparative descriptive research design with a retrospective approach**, aiming to evaluate the impact of locally sourced Supplementary Feeding (PMT) on the nutritional status of toddlers. The independent variable in this study was the implementation of the PMT program at Puskesmas 1 Negara. A total of **55 toddlers** who received PMT for a one-month period were included as research subjects using **total sampling**, meaning all children who met the criteria were selected. Nutritional improvements were assessed by comparing **pre- and post-intervention anthropometric data**, specifically weight and height. Statistical analysis was conducted using a **paired t-test** to determine the significance of changes in toddlers' body weight and height before and after PMT administration. The results demonstrated a significant increase in both parameters, indicating the effectiveness of locally sourced supplementary feeding in improving physical growth among malnourished toddlers.

DISCUSSION

The results of the paired t-test analysis revealed a statistically significant difference between toddlers' weight and height before and after the provision of Supplementary Feeding (PMT). This indicates that locally sourced PMT had a measurable impact on improving physical growth parameters in malnourished toddlers.

Before receiving PMT, nutritional status assessments showed that 43 toddlers (78.2%) were undernourished, and 12 toddlers (21.8%) were severely undernourished. Following the one-month intervention, the nutritional status improved notably: 23 toddlers (41.8%) achieved normal nutritional status, 29 (52.7%) remained undernourished, and only 3 (5.5%) were still severely undernourished. These findings reflect a substantial positive shift in growth metrics, especially in weight gain and height, after PMT administration.

The effectiveness of PMT in this study corroborates previous research indicating that targeted food supplementation—especially with locally available ingredients—can significantly address energy and nutrient gaps among young children. The integration of community-based nutrition strategies strengthens the likelihood of sustained improvement by aligning interventions with local food systems and parental involvement.

Given these findings, it can be concluded that PMT based on local food sources is an effective strategy for improving nutritional outcomes among toddlers with malnutrition. The success of the program at Puskesmas 1 Negara also offers valuable insight for replication in other community health centers aiming to reduce childhood malnutrition through accessible and culturally appropriate nutrition interventions.

CONCLUSION

The administration of locally sourced Supplementary Feeding (PMT) at Puskesmas 1 Negara significantly improved the nutritional status of toddlers with malnutrition. The intervention led to measurable increases in both weight and height among participants, confirming the effectiveness of PMT in addressing childhood undernutrition. Prior to the program, most toddlers exhibited undernourished or severely undernourished conditions; however, post-intervention data reflected a substantial shift toward normal nutritional status. These findings underscore the importance of community-based nutrition interventions tailored to local food resources, particularly in achieving broader public health goals and enhancing child development outcomes.

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REFERENCES

1. Fajar, S. A., Anggraini, C. D., & Husnul, N. (2022). Efektivitas pemberian makanan tambahan pada status gizi balita Puskesmas Citeras, Kabupaten Garut. *Nutrition Scientific Journal*, 1(1), 30–40. <https://doi.org/10.37058/nsj.v1i1.5975>
2. Kadir, S., Amalia, L., Kesehatan Masyarakat, J., Ung, F., & puskesmas Paguyaman kabupaten Boalemo, S. (2020). Efektivitas Pemberian Pmt Modif Berbasis Kearifan Lokal Terhadap Peningkatan Status Gizi Balita Gizi Kurang Dan Stunting. *Journal Health and Science ; Gorontalo Journal Health & Science Community*, 4.
3. Kementerian Kesehatan. (2025). PETUNJUK TEKNIS Pemberian Makanan Tambahan.
4. Kementerian Kesehatan RI. (2025). SSGI 2024.
5. Sekar, A., Putri, R., & Mahmudiono, T. (2020). Efektivitas Pemberian Makanan Tambahan (PMT) Pemulihan

Pada Status Gizi Balita di Wilayah Kerja Puskesmas Simomulyo, Surabaya Effectiveness of Supplementary Feeding Recovery on Children Under Five Nutritional Status in Simomulyo Health Center Work Area, Surabaya. <https://doi.org/10.2473/amnt.v4i1.2020.58-64>

6. Setyorini, D., Laili, N., Kartikasari, M., & Putri, M. (2024). Program Pemberian Makanan Tambahan (Pmt) Lokal Efektif Meningkatkan Berat Badan Balita Di Desa Krecek Kecamatan Badas Kabupaten Kediri. Vol. 03, 1178–1188. <https://spikesnas.khkediri.ac.id/SPIKesNas/index.php/MOO>
7. Sumarlan, Muzakkar, Nirmalarumsari, C., & Silfiana, A. (2023). Efektifitas Pemberian Makanan Tambahan Terhadap Peningkatan Tinggi Badan Pada Anak Stunting (Vol. 6, Issue 1). <http://journal.unpacti.ac.id/index.php/JPP>