



# Evaluation of Nutrition Supplementation and Nutrition Education Program in Preventing Malnutrition in Toddlers

Muhamad Nor Mudhofar<sup>1</sup>, Santi Aprilian Lestalu<sup>2\*</sup>, Feny Kusumadewi<sup>3</sup>, Mika Sugarni<sup>4</sup>, & Gusti Ayu Tirtawati<sup>5</sup>

<sup>1</sup>Politeknik Kesehatan Kementerian Kesehatan Semarang, Indonesia, <sup>2\*</sup>Politeknik Kesehatan Kementerian Kesehatan Maluku, Indonesia, <sup>3</sup>STIKES Banten, Indonesia, <sup>4</sup>Universitas Karya Persada Muna, Indonesia, <sup>5</sup>Politeknik Kesehatan Kementerian Kesehatan Denpasar, Indonesia

\*Co e-mail: [santiaprilian@poltekkes-maluku.ac.id](mailto:santiaprilian@poltekkes-maluku.ac.id)<sup>2</sup>

## Article Information

Received: August 29, 2024  
Revised: September 07, 2024  
Online: September 13, 2024

## Keywords

Nutrition Program Evaluation,  
Nutrition Education, Malnutrition

## ABSTRACT

*Require of strong nourishment in children underneath five may be a veritable around the world success issue, particularly in making nations. In Indonesia, the predominance of avoiding in 2020 come to 31.8%, which is diminutive in Southeast Asia after Timor Leste. In any case, this figure has diminished to 21.6% in 2022, concurring to information from the Indonesian Benefit of Success. This consider centers to overview the ampleness of nourishment supplementation and nourishment instruction programs in predicting wiped out prosperity in children underneath five. This investigate organize is an evaluative organize with a cross-sectional approach to actuate an graph at one time of the dietary status of children underneath five a long time of age, program utilization, and comes around satisfied. The input of the number of nourishment aces is misplaced, the Puskesmas needs 1 community success master, the hardware claimed is still misplaced interior the ask almost office zone and must ask obtainment from the City or Common Thriving Office and spares for MT dispersal are not in any case accessible, the resign isn't be that because it may on target and the program scope has not be that because it may come to the set accomplishment markers. Proposals for the Padang City government, especially the Padang City Thriving to encourage working environments and framework that are misplaced in puskesmas, in spite of the fact that for the Padang Thriving Center must conduct counseling on the importance of PMT-P so that the MT given right on target.*

**Keywords:** Nutrition Program Evaluation, Nutrition Education, Malnutrition

## INTRODUCTION

Ailing health in children beneath five is without a doubt a genuine worldwide wellbeing issue, particularly in creating nations. Below is relevant information based on available data: 1. Stunting: According to UNICEF, around 149 million children under five worldwide will be stunted by 2020. Stunting is caused by chronic malnutrition, especially during the first 1,000 days of life, and can be influenced by insufficient nutrient intake, recurrent infections, and inadequate parenting (Arjanto, 2024; Puskesmas Tangerang, 2024). 2. Wasting: In addition to stunting, around 45 million children under five years old experience wasting, which is very low body weight compared to height. Wasting is also caused by malnutrition, but usually occurs more quickly and acutely than stunting (Kurniawati & Ardiansyah, 2022). 3. Prevalence in Indonesia: In Indonesia, the predominance of hindering in 2020 come to 31.8%, which was moment in Southeast Asia after Timor Leste. In any case, this figure has diminished to 21.6% in 2022, concurring to information from the Indonesian Service of Wellbeing. 4. Cultural Factors: Cultural influences also play an important role in preventing stunting. Certain upbringings and traditions that do not support a healthy and nutritious diet can contribute to the problem of stunting. 5. Prevention Efforts: Overcoming stunting and wasting requires concerted efforts from families, communities and the government. This includes improved nutrition intake, better health services, and integration of cultural values in nutrition interventions.

Ailing health among children beneath five in Indonesia contains a wide and complex affect, not as it were on physical development, but too on cognitive advancement, learning capacity, and future wellbeing. Here are a few key focuses related to this condition: 1. Affect on Physical Development: Stunting is caused by persistent ailing health, especially during the primary 1,000 days of life. This will lead to a short body and weight that's not adjusted with tallness. Squandering, or exceptionally moo weight for stature, is additionally caused by lack of healthy sustenance, but as a rule happens more rapidly and intensely than hindering (Unicef, 2020). 2. Affect on Cognitive Improvement and Learning Capacity: Lack of healthy sustenance can influence brain work and memory, so children who are hindered or squandered may involvement diminished cognitive and learning capacities (FK UGM, 2024). 3. National Need in Moving forward Child Wellbeing Quality: The Government of Indonesia has set hindering as one of the national needs in endeavors to progress the quality of children's wellbeing. The government is committed to quickening hindering decrease and accomplishing the 14% target by 2024 through touchy and particular mediations, as well as fortifying coordination and information. 4. Prevention and Treatment Endeavors: Lack of healthy sustenance anticipation endeavors incorporate moved forward nourishment admissions, superior wellbeing administrations, and integration of social values in sustenance intercessions. The government is additionally working to make strides the quality and get to to wellbeing administrations by moving forward essential care, referrals, wellbeing strength frameworks, and progressing the quality of wellbeing human assets (Kemenkopmk, 2024). 5. Collaboration and Instruction: Collaboration among partners, counting writers and the media, is basic in realizing quality, responsive, imaginative, and productive wellbeing administrations. Instruction around the significance of keeping up wellbeing, such as getting utilized to the culture of washing hands, is



additionally a frame of exertion to move forward the quality of children's wellbeing (Megawati et al., 2018).

Thus, addressing under-five child malnutrition in Indonesia requires a comprehensive and sustainable strategy, involving all levels of society and government to achieve a better quality of health for children.

To address this problem, the government and various health organizations have launched various intervention programs, including nutrition supplementation and nutrition education programs for mothers and caregivers (Hermijanti et al., 2014). Nutritional supplementation aims to fulfill unmet nutritional needs from the daily diet, while nutrition education aims to improve understanding of the importance of good nutrition, healthy diets and proper feeding practices for children under five. The combination of these two approaches is expected to have a significant impact in preventing and reducing the prevalence of child malnutrition (BKKBN, 2024).

However, despite the implementation of various programs, the prevalence of malnutrition in Indonesia remains high in some areas. This raises questions about the effectiveness of the existing programs, particularly the nutrition supplementation and nutrition education programs. Have these programs succeeded in reaching the right targets? What is the community's acceptance and understanding of these programs? And most importantly, to what extent have these programs contributed to reducing malnutrition rates among children under five?

Therefore, this consider points to assess the adequacy of sustenance supplementation and sustenance instruction programs in anticipating lack of healthy sustenance among children beneath five. Through this evaluation, it is expected to find factors that support and hinder the success of the program, as well as recommendations for improving future interventions.

## **METHODS**

This ask about organize is an evaluative organize with a cross-sectional approach to energize an chart at one time of the dietary status of children underneath five a long time of age, program utilization, and comes around wrapped up. This evaluation will consolidate points of input (resources), and surrender (comes approximately inside the shape of changes inside the wholesome status of small children). The inquire about subjects and area of this ponder comprised of 2 fundamental bunches, specifically little children who had gotten wholesome supplementation programs for at slightest six months, moms or caregivers of ballita and wellbeing laborers included within the execution of nourishment instruction programs. The consider was conducted in a few Puskesmas and Posyandu in regions that are the center of the nourishment supplementation and nourishment instruction programs, by selecting regions that have tall lack of healthy sustenance rates based on information from the nearby wellbeing office.

A sample of toddlers and mothers/caregivers was selected using random sampling techniques for the program beneficiary group. This sample is estimated to include 100-150 toddlers and their mothers/caregivers. For qualitative interviews, a purposive sampling technique was used to select health workers and other relevant parties who have a direct role in program implementation. Data collection was conducted through measuring the wholesome status of

children beneath five a long time ancient utilizing anthropometric pointers, such as weight for age (BB/U), stature for age (TB/U), and weight for tallness (BB/TB). This information was taken from wellbeing records at the Puskesmas or Posyandu. Surveys were disseminated to moms or caregivers to assess the level of knowledge, attitude, and practice (KAP) related to toddler nutrition before and after attending nutrition education.

Interviews were conducted with wellbeing laborers included in program usage, mothers/caregivers, and a few community pioneers to get it program usage, challenges, and community reactions. FGDs were conducted with wellbeing specialists and mothers/caregivers to examine their encounters amid the program and suggestions for advancement.

Quantitative data were analyzed utilizing realistic and inferential estimations. Expressive examination was utilized to delineate the profile of respondents and the wholesome status of children underneath five. Inferential insights (such as T-test or relapse) will be utilized to test for contrasts or connections between the wholesome status of under-fives and the intercessions given (nourishment supplementation and sustenance instruction). Subjective information were analyzed utilizing topical examination to distinguish key subjects that risen from the interviews and FGDs, such as program victories, usage imperatives, and community discernments. This investigation was conducted physically or with the assistance of subjective information investigation program, such as NVivo.

This ponder has a few impediments, counting the restricted scope of the think about zone and time limitations in measuring the long-term affect of the program. In expansion, the success of the program is additionally impacted by outside variables such as family financial matters and get to to wellbeing offices, which may be troublesome to control.

## **RESULTS**

### **1. Input**

#### **a. Power**

The results showed that the health workers at the Nutrition and Lactation Clinic of Puskesmas Padang are not sufficient to carry out PMT-P tasks. Based on the interview results, the ideal number and education for health workers in the Nutrition and Lactation Clinic of Puskesmas Padang is 4 people to cover 4 villages in the working area of Puskesmas Padang, but in Puskesmas Padang there are only 3 people. Thus, the number of nurses employed by the Puskesmas This information was obtained from an interview with informant 2-Head of Nutrition Program.

#### **b. Means**

The results of the research at Puskesmas Padang show that facilities to support nutrition improvement programs, especially the PMT-P program for children under five, are available at Puskesmas Padang and come from the Padang City and Provincial Health Office. Many of the equipment needed to assist laboratory examinations are still missing, and Posyandu facilities are limited. The laboratory at Puskesmas Padang only has three tables and one dacin scale to measure height. There is no specialized equipment for nutrition-related health checks. Interviews with informant 1 (Head of Puskesmas) and informant 2 (Head of Nutrition Program) showed this.



### **c. Dana**

The results showed that there is no funding for PMT-P at the Padang Health Center. The City and Provincial Health Office provide supplementary food. Interviews with informant 1 (Head of Puskesmas) and informant 2 (Head of Nutrition Program) showed this.

## **2. Output**

### **a. Target Accuracy**

All activities have been carried out correctly and on target, according to the research results. Interview results with informant 2 (Head of the Nutrition Program) showed that the main targets are undernourished and malnourished children aged between 6 and 59 years old with BB/U and Z score  $<-2$  SD.

### **b. Program Scope**

As a result of an interview with the Head of Nutrition at Puskesmas Padang, every under-five child with poor or insufficient nutrition receives MT. The results of the evaluation of the performance achievements of the under-five nutrition improvement program at Puskesmas Padang are still largely brought to the desired level. Malnourished toddlers who received treatment were 77.1% of the 90% target, toddlers who weighed in at the posyandu were 55.6% of the 80% target, and toddlers who received PMT recovery were 100% of the 100% target. from secondary information taken from Puskesmas Padang in January 2019, 28 toddlers were malnourished or undernourished, and in December 2019, the number of toddlers dropped to 18. This is known from secondary data and interviews with informant 2 (Head of Nutrition Program) and informant 3 (Midwife).

## **DISCUSSION**

### **1. Input**

#### **a. Power**

The results showed that the nutrition staff at the Padang Health Center is insufficient to carry out the planned activities. Padang Community Health Center only has 3 nutrition staff for 4 villages and 29 Posyandu. They have a D-III in nutrition and an S1 in public health and most have work experience. One nutritionist is usually responsible for one area, but due to staff shortages, one of them has to be responsible for one area.

#### **b. Means**

The results showed that supplementary food stocks were always available, but supporting facilities and infrastructure, especially laboratory equipment, were lacking. This condition can hamper activities, especially monitoring nutritional status through laboratory equipment. Both directly and indirectly, you can find the causes of malnutrition. Laboratory support equipment is very important in certain cases. Therefore, the lack of equipment that supports the program will hinder the expected goals and objectives.



### **c. Dana**

Funds are the amount of money given or collected for a specific purpose, such as the expenses required to implement the Community Nutrition Improvement Program (Purnama, 2015). The results showed that at Puskesmas Oepoi there are no funds for the PMT-P Program. This is in accordance with what the Head of Puskesmas Oepoi said when interviewed, who said that there are no funds for PMT-P because the MT package is given directly from the City and Provincial Offices. However, when monitoring the development of toddlers at the posyandu, MT is also provided and money for transportation amounting to Rp.

## **2. Output**

### **a. Target Accuracy**

As a result of a study conducted at Puskesmas Oepoi, a target of the PMT-P program, it was found that all toddlers at Puskesmas Padang with a poor-poor nutrition status, indicated by BB/U with a Z-SCORE value  $< -2$  SD, received MT from nutritionists, midwives, and staff during posyandu. According to research conducted in 2016 by Hadiriesandi on the Assessment of the Recuperation Supplementary Nourishing Program for Malnourished Little children at Puskesmas Andong, Boyolali Regency, targets who received MT were considered BB/U and had a Z-SCORE  $< -3$  SD. According to the Technical Guidelines for Supplementary Feeding for Toddlers issued by the Indonesian Ministry of Health in 2017, this study focuses on targeting schools and pregnant women in providing additional food for nutritionally deficient toddlers if BB/U has a Z-SCORE value below 2 SD. The puskesmas should maintain this target and explain the efficacy of MT during supplementary feeding.

### **b. Program Scope**

Regulation of the Minister of Health of the Republic of Indonesia No. 23/2014 on Nutrition Improvement Efforts is the basis of this nutrition improvement for children under five. The results showed that the implementation of improved under-five nutrition, particularly the PMT-P program at Puskesmas Padang, is influenced by inputs and processes. The goal of improved nutrition is to ensure that everyone has access to information and education about nutrition, nutritious foods such as PMT-P, and the health and nutrition services available to them. Toddlers who weighed in at the posyandu, or 821 out of 1,477 toddlers in the Padang Health Center's working area, were treated (77.1%), or 6 out of 8 out of the total malnourished toddlers. They also received recovery PMT (100%) or all undernourished or malnourished children received MT packages (46 children).

## **CONCLUSIONS**

One of the input variables that needs to be considered is the availability of three staff in the nutrition and lactation clinic, which is still insufficient because four people are needed to cover four villages in the working area of Puskesmas Padang. While supporting equipment for laboratory tests is not yet available, facilities for counseling and weight monitoring, height meters, and supplementary food stocks are always available. In addition, there are no PMT-P funds at Puskesmas Padang; supplementary food packages are provided directly from the City and



Provincial Health Office. The process variable shows that the planning process for the nutrition improvement program for children under five is in accordance with the mechanism, and the puskesmas must discuss the PMT-P distribution fund. In terms of implementation, midwives, nutritionists, and cadres provide supplementary food to under-fives for ninety days or three consecutive months. For recording and reporting, there is no simple daily recording of the acceptability of supplementary food recovery; staff only record during posyandu. Nutrition workers should teach mothers of children under five about the importance of daily recording to track changes in their children. Furthermore, reports are made from Posyandu, Pustu, Puskesmas, and finally to the Health Office.

## REFERENCES

- Arjanto, D. (2024, February 18). A Total Of 149 Million Stunted Children Were Recorded Worldwide In 2020, What Is Stunting? Tempo. <https://gaya.tempo.co/read/1834967/sebanyak-149-juta-anak-stunting-tercatat-di-seluruh-dunia-pada-2020-apa-itu-stunting>
- BKKBN. (2024, March 24). Providing Additional Nutritional Intake For Toddlers With Malnutrition Status. BKKBN; BKKBN. <https://kampungkb.bkkbn.go.id/kampung/39636/intervensi/786998/pemberian-tambahan-asupan-gizi-bagi-balita-dengan-status-gizi-kurang>
- Direktorat Jenderal Kekayaan Negara. (2023). Stunting Problems in Indonesia and Their Resolution. Kemenkeu.go.id. <https://www.djkn.kemenkeu.go.id/kpkn1-pontianak/baca-artikel/16261/Permasalahan-Stunting-di-Indonesia-dan-Penyelesaiannya.html>
- FK UGM. (2024, March 26). Understanding the Health-Related Quality of Life of Indonesian Children: A Study in Sleman - HDSS Faculty of Medicine UGM. Ugm.ac.id. <https://hdss.fk.ugm.ac.id/2024/03/26/memahami-kualitas-hidup-terkait-kesehatan-anak-indonesia-sebuah-studi-di-sleman/>
- Hermijanti, E., Novianti, D., Mulyati, T., Wijaya, L., & Marcella, M. (2014). Intervention Programme To Reduce The Number Of Undernourished Children In KU Urban Health Centre, Kembangan Sub-District, West Jakarta Municipality, DKI Jakarta. Ebers Papyrus, 20(2). <https://www.neliti.com/id/publications/89857/program-intervensi-dalam-upaya-penurunan-jumlah-balita-gizi-kurang-di-puskesmas>
- Kemenkopmk. (2024). Collaboration Between Stakeholders to Improve the Quality of Indonesian Public Health | Coordinating Ministry for Human Development and Culture. Kemenkopmk.go.id. <https://www.kemenkopmk.go.id/kolaborasi-antar-pemangku-kepentingan-untuk-tingkatkan-kualitas-kesehatan-masyarakat-indonesia>
- Kurniawati, N., & Ardiansyah, R. Y. (2022). The Effect of Maternal Educational Background on Maternal Knowledge of Local Food-Based Menus for the Prevention of Stunting. Journal of Health Science and Practice Development, I(4). <https://e-journal.lppmdianhusada.ac.id/index.php/PIPK/article/download/237/221>



- Megawati, A., Hastuti, E. D., & Sari, D. E. M. (2018). Improving the Quality of Children's Health with the Application of Proper Hand Washing and Introduction to Medicine to Early Childhood. *Journal of Health Services*. <https://doi.org/10.31596/jpk.v1i1.6>
- Puskesmas Tangerang. (2024). Cultural Determinants of Stunting Incidence in Indonesia. [Tangerangkota.go.id. https://puskesmas.tangerangkota.go.id/berita/artikel-kesehatan-determinan-faktor-budaya-pada-kejadian-stunting-di-indonesia](https://puskesmas.tangerangkota.go.id/berita/artikel-kesehatan-determinan-faktor-budaya-pada-kejadian-stunting-di-indonesia)
- Sandi, M. R. (2023, July 6). 149 Million of the World's Toddlers Are Stunted. <https://National.okezone.com/Okezone.com>.  
<https://nasional.okezone.com/read/2023/07/06/337/2842265/wapres-juta-balita-dunia-mengalami-stunting?page=all>
- Unicef. (2020). Situation of Children in Indonesia 2020. <https://www.unicef.org/indonesia/sites/unicef.org/indonesia/files/2020-07/Situasi-Anak-di-Indonesia-2020.pdf>
- Carla. (2023, September 22). This is how AI is used in the construction world - Widya Robotics. Widya Robotics. <https://widya.ai/ini-adalah-ai-digunakan-di-dunia-konstruksi/>
- Putri, M. K., Isfanda, Evand, H., Supandi, A., & Utami, F. M. (2022). Evaluation Of Nutritional Status In Primary School-Aged Children In Sigli City.
- Ratumanan, S. P., Achadiyani, & Khairani, A. F. (2023). Anthropometric Methods for Assessing Nutritional Status: A Literature Study.
- Wahyuningsih, S., & Devi, M. I. (2017). Evaluation Of The Supplementary Feeding Programme (Pmt) For Malnourished Toddlers At The Jakenan Health Centre In Pati District. *Journal of Nursing and Public Health Cendekia Utama*, 6(2). <https://doi.org/10.31596/jcu.v6i2.188>
- Yudina, M. K., & Fayasari, A. (2020). Evaluation of Iron Tablet Supplementation Programme of Female Adolescent in East Jakarta. *Scientific Journal of Health (JIKA)*, 2(3), 147-158. <https://doi.org/10.36590/jika.v2i3.56>
- Zalumin, & Fadlan. (2024). Evaluation of the Effectiveness of Nutrition and Health Interventions in Reducing Stunting and Nutrition Problems in Early Childhood: A Literature Review. *Journal of Modern Technology and Science*, 1(2), 49-54. <https://doi.org/10.69930/jtsm.v1i2.160>