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

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ABSTRACT

The lack of adequate nutritional intake in toddlers is a significant global health issue, particularly in developing countries. In Indonesia, the prevalence of stunting reached 31.8% in 2020, the lowest rate in Southeast Asia after Timor-Leste. Nevertheless, this figure dropped to 21.6% in 2022, according to data from the Indonesian Ministry of Health. This study focuses on reviewing the effectiveness of supplementary feeding programs and nutritional education in preventing poor health conditions in toddlers. The study uses an evaluative design with a cross-sectional approach to provide a snapshot of toddler nutritional status, program utilization, and results achieved at a single point in time. Findings indicate that the number of nutritionists is still insufficient; the community health center (Puskesmas) requires one public health worker, equipment at the health center is lacking and must be requested from the City or Provincial Health Office, and funds for distributing supplementary food (MT) are not yet available. Furthermore, the targeting is inaccurate, and program coverage has not yet met the established success indicators. Recommendations for the Padang City government, specifically the Padang City Health Office, include completing the missing facilities and infrastructure at the health center. Meanwhile, the Padang Health Center should conduct outreach on the importance of PMT-P to ensure that the supplementary food provided reaches the intended targets.

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

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INTRODUCTION

Poor health in children under five (toddlers) is undoubtedly a real global health issue, especially in developing countries. Here is relevant information based on available data: 1. Stunting: According to UNICEF, approximately 149 million toddlers worldwide were stunted in 2020. Stunting is caused by chronic malnutrition, particularly during the first 1,000 days of life, and can be influenced by inadequate nutritional intake, recurrent infections, and poor parenting practices (Arjanto, 2024; Puskesmas Tanggerang, 2024). 2. Wasting: In addition to stunting, about 45 million children under the age of five experience wasting, which is a very low weight-to-height ratio. Wasting is also caused by malnutrition, but it usually occurs more rapidly and acutely than stunting (Kurniawati & Ardiansyah, 2022). 3. Prevalence in Indonesia: In Indonesia, the prevalence of stunting in 2020 reached 31.8%, ranking second in Southeast Asia after Timor-Leste. However, this figure decreased to 21.6% in 2022, according to data from the Indonesian Ministry of Health. 4. Cultural Factors: Cultural influences also plays an important role in preventing stunting. Certain parenting patterns and traditions that do not support a healthy and nutritious diet can contribute to stunting issues. 5. Prevention Efforts: Addressing stunting and wasting requires collective efforts from families, communities, and the government. This includes increasing nutritional intake, better health services, and integrating cultural values into nutritional interventions.

Poor health among toddlers in Indonesia has broad and complex impacts, not only on physical growth but also on cognitive development, learning capacity, and future health. Here are some key points related to this condition: 1. Impact on Physical Growth: Stunting is caused by persistent malnutrition, especially during the first 1,000 days of life. This leads to a short stature and a body weight that is disproportionate to height. Wasting, or very low weight-for-height, is also caused by a lack of healthy nutritional intake but usually occurs more quickly and intensely than stunting (Unicef, 2020). 2. Impact on Cognitive Development and Learning Capacity: Lack of healthy nutritional intake can affect brain function and memory, so children experiencing stunting or wasting may suffer from decreased cognitive and learning abilities (FK UGM, 2024). 3. National Priority in Improving Child Health Quality: The Indonesian government has designated stunting as one of the national priorities in efforts to improve child health quality. The government is committed to accelerating the reduction of stunting to reach a target of 14% by 2024 through nutrition-specific and nutrition-sensitive interventions, as well as strengthening coordination and data. 4. Prevention and Handling Efforts: Efforts to prevent malnutrition include increasing food intake, better health services, and integrating social values into nutritional interventions. The government is also working to improve the quality of and access to health services by enhancing primary care, referrals, health resilience systems, and the quality of health human resources (Kemenkopmk, 2024). 5. Collaboration and Education: Collaboration among stakeholders, including researchers and the media, is crucial in realizing quality, responsive, innovative, and productive health services. Education on the importance of maintaining health, such as habituating a hand-washing culture, is also a form of effort to improve child health quality (Megawati et al., 2018). Therefore, addressing toddler malnutrition in Indonesia requires a comprehensive and

sustainable strategy involving all levels of society and the government to achieve better child health quality.

To address this issue, the government and various health organizations have launched various intervention programs, including nutritional supplementation and nutritional education programs for mothers and caregivers (Hermijanti et al., 2014). Nutritional supplementation aims to meet nutritional needs not fulfilled by the daily diet, while nutritional education aims to increase understanding of the importance of good nutrition, a healthy diet, and proper feeding practices for toddlers. The combination of these two approaches is expected to have a significant impact on preventing and reducing the prevalence of child malnutrition (BKKBN, 2024).

However, despite various programs being implemented, the prevalence of malnutrition in Indonesia remains high in several regions. This raises questions regarding the effectiveness of existing programs, specifically nutritional supplementation and nutritional education programs. Have these programs successfully reached the right targets? How is the public's acceptance and understanding of these programs? And most importantly, to what extent have these programs contributed to reducing malnutrition rates among toddlers? Therefore, this study aims to evaluate the adequacy of nutritional supplementation programs and nutrition education in preventing the lack of healthy nutritional intake among toddlers. Through this evaluation, it is hoped that factors supporting and hindering the success of the programs can be identified, along with recommendations for improving future interventions.

METHODS

This study is an evaluative research project using a cross-sectional approach to provide a snapshot of toddler nutritional status, program utilization, and outcomes. This evaluation will combine input points (resources) and outcomes (in the form of changes in toddler nutritional status). The study population and setting consist of two main groups: toddlers who have received nutritional supplementation programs for at least six months, mothers or caregivers, and health workers involved in implementing nutrition education programs. The study was conducted at several Community Health Centers (Puskesmas) and Integrated Healthcare Centers (Posyandu) in areas serving as hubs for nutrition supplementation and education programs, specifically selecting regions with high malnutrition rates based on local health department data.

The sample of toddlers and mothers/caregivers was selected using a random sampling technique for the program beneficiary group. This sample is estimated to include 100-150 toddlers along with their mothers/caregivers. For qualitative interviews, a purposive sampling technique was used to select health workers and other relevant parties directly involved in program implementation. Data collection was carried out by measuring toddler nutritional status using anthropometric indicators, such as weight-for-age (W/A), height-for-age (HFA), and weight-for-height (WFH). These data were taken from health records at the Puskesmas or Posyandu. Questionnaires were distributed to mothers or caregivers to evaluate their level of knowledge, attitudes, and practices (KAP) regarding toddler nutrition before and after participating in nutrition education.

Interviews were conducted with health workers involved in program implementation, mothers/caregivers, and several community leaders to understand program implementation, challenges, and community response. FGDs were held with health workers and mothers/caregivers to discuss their experiences during the program as well as suggestions for improvement.

Quantitative data were analyzed using descriptive and inferential statistics. Descriptive analysis was used to describe respondent profiles and toddler nutritional status. Inferential statistics (such as T-tests or regression) were used to test differences or relationships between toddler nutritional status and the interventions provided (nutritional supplementation and nutrition education). Qualitative data were analyzed using thematic analysis to identify key themes emerging from interviews and FGDs, such as program success, implementation constraints, and community perceptions. This analysis was performed manually or with the help of qualitative data analysis software, such as NVivo.

This study has several limitations, including limited geographical coverage and time constraints in measuring the long-term impact of the program. Additionally, program success is also influenced by external factors such as family economics and access to health facilities, which may be difficult to control.

RESULTS

1. Input

a. Power

The research results show that the number of health workers at the Nutrition and Lactation Clinic of the Padang Health Center is insufficient to carry out PMT-P (Supplementary Feeding Program) tasks. Based on interview results, the ideal number and educational background for health workers at the Nutrition and Lactation Clinic of the Padang Health Center would be four people to cover the 4 sub-districts in the Padang Health Center's working area, but currently, only three people are available. Thus, the number of health workers at the Health Center is still insufficient. This information was obtained from an interview with informant 2 (Head of the Nutrition Program).

b. Means

Research results at the Padang Health Center show that supporting facilities for the nutrition improvement program, specifically the PMT-P program for toddlers, are already available at the Padang Health Center and come from the Padang City and Provincial Health Offices. However, much of the equipment needed to assist with laboratory tests is still lacking, and Posyandu (Integrated Healthcare Center) facilities are also limited. The laboratory at the Padang Health Center only has three tables and one dacin scale for measuring weight. There is no specialized equipment for nutrition-related health examinations. This was indicated through interviews with informant 1 (Head of the Health Center) and informant 2 (Head of the Nutrition Program).

c. Funds

The research results show that there is no specific funding for PMT-P at the Padang Health Center. The City and Provincial Health Offices provide supplementary food directly. This was

indicated through interviews with informant 1 (Head of the Health Center) and informant 2 (Head of the Nutrition Program).

2. Output

a. Target Accuracy

Based on the research results, all activities have been carried out correctly and are on target. Interview results with informant 2 (Head of the Nutrition Program) show that the primary targets are malnourished and severely malnourished children aged between 6 to 59 months with W/A (Weight-for-Age) indicators and a Z-score < -2 SD.

b. Program Coverage

Based on interview results with the Head of Nutrition at the Padang Health Center, every toddler with severe or moderate malnutrition receives supplementary food. The evaluation results of the performance achievements for the toddler nutrition improvement program at the Padang Health Center are mostly still below the expected levels. Severely malnourished toddlers receiving care stood at 77.1% of the 90% target, toddlers weighed at the Posyandu stood at 55.6% of the 80% target, and toddlers receiving PMT for recovery stood at 100% of the 100% target. From secondary data taken from the Padang Health Center in January 2019, there were 28 severely or moderately malnourished toddlers, and by December 2019, that number had dropped to 18 children. This is known from secondary data as well as interviews with informant 2 (Head of the Nutrition Program) and informant 3 (Midwife).

DISCUSSION

1. Input

a. Power

The research results show that the nutritional staff at the Padang Community Health Center (Puskesmas) are insufficient to carry out the planned activities. Puskesmas Padang only has three nutritional staff members to serve 4 sub-districts and 29 Posyandu (Integrated Healthcare Centers). They have educational backgrounds in D-III Nutrition and Bachelor of Public Health, and most already have work experience. One nutritionist is usually responsible for one area, but due to staff shortages, one of them must cover more than one area.

b. Means

The research results show that supplementary food stocks are always available, but supporting facilities and infrastructure, specifically laboratory equipment, are still lacking. This condition can hinder activities, especially the monitoring of nutritional status through laboratory equipment. Both directly and indirectly, the causes of malnutrition can be identified. Laboratory supporting equipment is very important in certain cases. Therefore, the lack of equipment supporting the program will hinder the expected targets.

c. Funds

Funds are an amount of money given or collected for a specific purpose, such as the costs required to implement the Community Nutrition Improvement Program (Purnama, 2015). The

research results show that at Puskesmas Oepoi, funds for the PMT-P (Recovery Supplementary Feeding) Program are not available. This is consistent with what the Head of Puskesmas Oepoi stated during an interview, saying that there are no funds for PMT-P because the MT (Supplementary Feeding) packages are provided directly from the City and Provincial Health Offices. However, during the monitoring of toddler development at the posyandu, MT is also provided along with transportation money amounting to Rp. 500.000,-.

2. Output

a. Target Accuracy

Based on the results of the study conducted at Puskesmas Oepoi as the target of the PMT-P program, it was found that all toddlers at Puskesmas Padang with poor-underweight nutritional status, indicated by W/A (Weight-for-Age) with a Z-SCORE < -2 SD, received MT from nutritionists, midwives, and staff during posyandu. According to research conducted in 2016 by Hadiriesandi regarding the Assessment of the Recovery Supplementary Feeding Program for Malnourished Toddlers at Puskesmas Andong, Boyolali Regency, the targets receiving MT were those with W/A with a Z-SCORE <-3 SD. Based on the Technical Guidelines for Toddler Supplementary Feeding issued by the Indonesian Ministry of Health in 2017, This study focuses on toddlers with malnutrition as the primary target of supplementary feeding programs if W/A has a Z-SCORE value below 2 SD. The Puskesmas must maintain this target and ensure appropriate implementation of MT during supplementary feeding.

b. Program Coverage

The Regulation of the Minister of Health of the Republic of Indonesia No. 23/2014 concerning Nutrition Improvement Efforts is the basis for this improvement in toddler nutrition. The research results show that the implementation of toddler nutrition improvement, specifically the PMT-P program at Puskesmas Padang, is influenced by inputs and processes. The goal of nutrition improvement is to ensure everyone has access to information and education about nutrition, nutritious food such as PMT-P, as well as health and nutrition services available to them. Toddlers weighed at the posyandu, or 821 out of 1,477 toddlers in the Puskesmas Padang working area, were covered (77.1%), or 6 out of 8 of the total malnourished toddlers. They also received recovery PMT (100%) or all underweight or malnourished children received MT packages (46 children).

CONCLUSIONS

One of the input variables that needs attention is the availability of three staff members at the nutrition and lactation clinic, which is still insufficient because four people are needed to cover the four sub-districts in the Puskesmas Padang working area. Although supporting equipment for laboratory tests is not yet available, facilities for counseling and weight monitoring, height measuring tools, and supplementary food stocks are always available. Additionally, there are no PMT-P funds at Puskesmas Padang; supplementary food packages are provided directly from the City and Provincial Health Offices. Process variables show that the planning process for the toddler nutrition improvement program is in accordance with the mechanism, and the puskesmas must

discuss PMT-P distribution funds. In terms of implementation, midwives, nutritionists, and cadres provide supplementary food to toddlers for ninety days or three consecutive months. For recording and reporting, there is no simple daily recording regarding the acceptance of recovery supplementary food; staff only record during posyandu. Nutrition officers must educate mothers of toddlers about the importance of daily recording to monitor changes in their children. Furthermore, reports are made from the Posyandu, Pustu (Sub-Health Centers), Puskesmas, and finally to the Health Office.

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