

EVALUATION OF THE LOCALLY PRODUCED PMT-P PROGRAM FOR PREGNANT WOMEN WITH KEK AT THE KOTA BARAT COMMUNITY HEALTH CENTER

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Abstract

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Chronic Energy Deficiency (CED) in pregnant women remains a serious nutritional problem in Indonesia. One intervention to address this is the locally sourced Supplementary Food Recovery Program (PMT-P). The research problem is how the PMT-P program is implemented for pregnant women with CED in the Kota Barat Community Health Center (Puskesmas Kota Barat) working area. This study aims to evaluate the program's implementation. This study used a descriptive qualitative method with a case study approach. Twenty informants were selected using a purposive sampling technique. Data were collected through in-depth interviews, observation, and document review, then analyzed descriptively. The results showed that the program's input aspects were supported by health workers, cadres, funds, and facilities, but still faced transportation constraints. In terms of process, activities included planning, distribution of local food ingredients, nutrition counseling, and monitoring. In terms of output, the program had a positive impact in the form of increased compliance with PMT consumption, nutritional understanding, and an increase in the average LiLA of pregnant women from 22.8 cm to 24.1 cm. The locally sourced PMT-P program has been proven to have a positive impact on improving the nutritional status of pregnant women with CED. It is recommended to strengthen transportation facilities, increase the role of cadres, and ensure the sustainability of local food supplies.

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INTRODUCTION

Nutritional issues in pregnant women remain a strategic issue in health development in Indonesia. Optimal nutritional status during pregnancy is a crucial

prerequisite for ensuring maternal health and optimal fetal growth and development. During pregnancy, energy needs increase, necessitating an additional intake of approximately 300 kcal per day to support fetal growth and maternal physiological changes. Adequate energy intake must be accompanied by adequate consumption of energy-rich foods to prevent pregnant women from developing Chronic Energy Deficiency (CED) (Kurnianti, 2022). Chronic Energy Deficiency not only impacts maternal health but also increases the risk of low birth weight (LBW), stunting, and neonatal and maternal mortality, making it a serious public health issue.

Nationally, the prevalence of CED in pregnant women still shows alarming figures. Data from the Basic Health Research (Riskesdas), (2018) shows the prevalence of CED in pregnant women at 17.3%, with higher figures in remote and underdeveloped areas. Periodic reports from 34 provinces noted that of 4,656,382 pregnant women whose mid-upper arm circumference (LILA) was measured, 451,350 pregnant women had a LILA <23.5 cm, indicating a risk of CED. At the regional level, the 2025 Gorontalo Provincial Health Profile reported that there were 3,016 pregnant women at risk of CED (13.08%), with the highest percentages in the Hulonthalangi Community Health Center (13.5%), West City (12.8%), and Pilolodaa (10.2%), while the lowest was in the Sipatana Community Health Center (4.4%) (Gorontalo Provincial Health Office, 2023). Globally, the World Health Organization (2023) reported that the prevalence of CED among pregnant women reached 30.1% in 2017, with some countries showing higher figures. This data confirms that CED among pregnant women remains a major challenge, both nationally and globally.

To address these issues, the government has launched various nutritional interventions, one of which is the Supplementary Feeding (PMT) program. PMT is an effort to improve nutrition by providing additional food to meet nutritional needs and achieve better nutritional status. As policy developments develop, the PMT approach is no longer limited to instant foods such as high-energy biscuits, but is directed towards the utilization of local foods through the Supplementary Feeding Recovery (PMT-P) program, which uses locally sourced foods (Ministry of Health of the Republic of Indonesia, 2020). This approach emphasizes the use of locally available foods, such as rice, mung beans, eggs, and other processed products, which are rich in energy and protein and more readily accepted by the community (Lopes et al., 2024).

The implementation of locally sourced PMT (Food-Based Nutrition) is not only oriented towards meeting nutritional needs but also towards community empowerment and program sustainability. Community involvement in the production and distribution of supplementary food is considered to increase collective awareness of the importance of nutrition during pregnancy and strengthen the local economy (Habtu et al., 2022). Furthermore, PMT activities need to be accompanied by nutrition and health education to encourage behavioral changes, including breastfeeding practices, dietary patterns, and family hygiene and sanitation (Ministry of Health, 2023). Indonesia, with its high biodiversity with various sources of carbohydrates, proteins, vegetables, fruits, and spices, has great potential to optimize the use of local foods as basic PMT ingredients, although its utilization is not yet optimal (Ministry of Health, 2023). To support the implementation of this program, the government provides funding through the Non-Physical Special Allocation Fund (DAK) and develops technical guidelines as a reference for implementation (Ministry of Health, 2023).

In Gorontalo Province, efforts to address chronic energy deficiency syndrome (KE) are carried out through mentoring pregnant women at risk, providing PMT (Food-Based Nutrition), increasing the capacity of health workers, and gradually implementing PMT based on local foods in various community health centers (Gorontalo Provincial Health Office, 2023). One of the community health centers implementing this program is the Kota Barat Community Health Center, which, in addition to implementing PMT biscuits and local PMT, also developed the innovative "Gemah Kuah Bugis" (Joint Movement to Reduce the Number of Pregnant Women with KEK, Malnutrition, and Stunting) program with the "KETUPAT" component that emphasizes balanced nutritional consumption, environmental hygiene education, blood pressure control in adolescents, changes in healthy lifestyles and exclusive breastfeeding, and therapy for comorbidities. However, as a relatively new program, PMT based on local foods still raises questions regarding its effectiveness compared to PMT based on instant foods, the level of compliance of pregnant women, and challenges in distribution and sustainability of raw materials.

This gap indicates the need for a comprehensive evaluation of the implementation of locally sourced PMT-P, particularly in terms of input, process, and output aspects of the program. This evaluation is crucial to assess the extent to which the program contributes to improving the nutritional status of pregnant women and reducing the risk of developing certain economic conditions (KE), as well as to provide a basis for formulating more effective and sustainable policies. Based on this background, this study aims to evaluate the locally sourced Supplementary Feeding (PMT-P) program for pregnant women with special economic conditions (KE) in the Kota Barat Community Health Center (Puskesmas) working area, by systematically analyzing the program's input, process, and output aspects. The results of this study are expected to provide theoretical contributions in the development of nutrition program evaluation studies and serve as practical considerations for policymakers in efforts to improve the nutritional status of pregnant women.

METHOD STUDY

Research Design and Location

This research was conducted in the working area of the West City Community Health Center, Gorontalo City, from January to February 2025. The research design used was descriptive with a qualitative approach through a case study. This approach was chosen to explore in depth the implementation of the Supplementary Recovery Feeding (PMT-P) program made from local foods for pregnant women with Chronic Energy Deficiency (CED), with clear case boundaries and the use of various data sources. Primary data collection was conducted through in-depth interviews to obtain a comprehensive picture of the program's input, process, and output aspects.

Subjects and Informant Determination Techniques

The research targets included nutrition officers, pregnant women with CED, and health cadres in the Kota Barat Community Health Center (Puskesmas) working area. The research targets were understood as some or all members of the research object and were considered representative of the population (Rokhmah et al., 2022). Informants were determined using purposive sampling, which selects data sources based on specific considerations relevant to the research objectives.

The informants in this study consisted of three categories, namely: (1) key

informants, namely nutrition officers from the West City Health Center who had basic information related to program planning and implementation; (2) primary informants, namely pregnant women with KEK as program beneficiaries; and (3) additional informants, namely health cadres involved in the distribution of local PMT-P. This classification was intended to obtain diverse perspectives and strengthen the depth of analysis.

Data Collection Techniques and Instruments

Data were collected through in-depth semi-structured interviews, observations, documentation studies, and source triangulation. In-depth interviews were conducted to explore in detail the experiences, perceptions, and implementation of the local PMT-P program. Observations were conducted with the researcher's involvement in program activities to obtain a factual picture of input aspects and the implementation process. Documentation studies were conducted on official documents, such as the work reference framework, PMT monitoring reports for pregnant women in Special Economic Zones (KE), and maternal cohorts.

Source triangulation was applied by comparing information obtained from nutrition officers, pregnant women with special needs (KE), and health cadres to test the credibility of the data. The research instruments used included interview guidelines, observation sheets, recording devices, and program document review formats.

Data Analysis Techniques

Data analysis was conducted simultaneously from the pre-field stage, during data collection, and after the research was completed. The analysis process included systematic data collection, reduction, presentation, and conclusion drawing. The interactive analysis model proposed by Miles and Huberman was used, which includes data reduction, data display, and conclusion drawing/verification (Braun & Clarke, 2021).

Data reduction was performed by summarizing, selecting key information, and focusing on important aspects relevant to program evaluation (Kiger & Varpio, 2020). Data presentation was conducted in narrative form to facilitate understanding of the relationships between categories and field findings (Kiger & Varpio, 2020). Furthermore, conclusions were drawn and verified continuously by testing the consistency and validity of the findings based on empirical evidence obtained in the field. This process was carried out until data saturation was reached and credible conclusions were obtained.

With this approach, the evaluation of the PMT-P program using local food ingredients was analyzed comprehensively based on input, process, and output aspects to assess the effectiveness of program implementation for pregnant women with special economic conditions (KE) in the working area of the West City Health Center.

RESULTS AND DISCUSSION

Characteristics of Research Locations and Informants

The study was conducted in the Kota Barat Community Health Center (Puskesmas) working area, covering 5.96 km², encompassing the sub-districts of Buladu (1.93 km²), Molosipat-W (1.09 km²), Buliide (1.23 km²), and Tenilo (1.71 km²). By 2023, the PMT-P program had reached 31 pregnant women with special economic conditions (KE), indicating a high need for nutritional interventions in the region.

Table 1. Characteristics of Key Informants (Nutrition Officers)

Position	Number (n)	Age Range (Years)	Last education
Nutrition Coordinator	1	27	A.Md.Gz
Nutrition Officer	4	25–48	AMG/S.Gz
Total	5	25–48	Diploma/Bachelor's Degree

Source: Data primary, 2025

Based on Table 1, all key informants were female with an educational background in nutrition.

Table 2. Characteristics of Key Informants (Pregnant Women with KEK)

Variables	Distribution
Number of Respondents	20 people
Age Range	25–45 years
Dominant Education	SENIOR HIGH SCHOOL
Initial Nutritional Status	SEZ (100%)

Source: Data primary, 2025

As shown in Table 2, all key informants were pregnant women with KEK status. The majority had a high school education, with one respondent having a bachelor's degree.

Table 3. Characteristics of Additional Informants (Health Cadres)

Variables	Distribution
Amount	8 people
Age Range	27–57 years
Dominant Education	High School/Vocational School
Gender	Female (100%)

Source: Data primary, 2025

This characteristic shows the active involvement of female cadres with secondary education background in program implementation.

Input Aspect Evaluation Results

The input aspect evaluation covers six components: human resources (HR), funding sources, infrastructure, targets, service methods, and materials. In terms of HR, the program involves nutrition officers and health cadres in each sub-district. Task distribution has been carried out according to operational standards. However, obstacles were encountered in the form of limited transportation in distributing PMT-P to pregnant women's homes, especially in areas with difficult geographical access (Maryam Rahim, interview, February 10, 2025). In terms of funding, the program is supported by BOK funds of IDR 90,000,000 sourced from the Gorontalo City Health Office (Isra Ismail, interview, February 10, 2025). These funds are used to procure local food ingredients managed according to technical guidelines. Infrastructure includes LILA measuring instruments, scales, counseling rooms, cadre training facilities, integrated health posts (posyandu), and the EPP-GBM electronic recording system (Isra Ismail, interview, February 24, 2025).

In general, no significant obstacles were found in this aspect. The program targets were determined based on the LILA measurement < 23.5 cm according to the standards of the Indonesian Ministry of Health. Pregnant women with special economic conditions (KE) were the main priority recipients of PMT-P (Hartati Daud, interview, February 18, 2025). Service methods included screening, daily PMT-P provision for 90 days,

nutritional counseling, cadre mentoring, and biweekly monitoring (Isra Ismail, interview, February 22, 2025). PMT-P materials consisted of local foods such as rice, corn, tubers, nuts, vegetables, fruit, and milk. Daily menu variations were implemented to prevent consumption saturation (HR, interview, February 22, 2025).

Process Aspect Evaluation Results

The planning stage begins with data collection of pregnant women with special economic zones (KE) through cohorts, sending data to the central government, and determining the budget (Isra Ismail, interview, February 22, 2025). Implementation is carried out through direct distribution by cadres to pregnant women's homes without storing materials. Distribution is accompanied by counseling to ensure optimal utilization (Fitri Djafar, interview, February 24, 2025). Monitoring is carried out every two weeks through weight and LILA measurements (Isra Ismail, interview, February 24, 2025). Evaluation by the Health Office is carried out every 3–6 months. Recording is carried out manually and electronically through EPP-GBM. The manual system faces challenges in the form of potential recording errors and delays in recapitulation (Hartati Daud, interview, February 24, 2025).

Output Aspect Evaluation Results

Table 4. Results of Monitoring the Nutritional Status of Pregnant Women with Special Economic Conditions After Local PMT-P Intervention

Post-Intervention Nutritional Status	Number (n)	Percentage (%)
Normal (LILA \geq 23.5 cm)	14	70
Still KEK (LILA < 23.5 cm)	6	30
Total	20	100

Source: Data primary, 2025

Based on Table 4, 14 of the 20 pregnant women (70%) experienced improvements in their nutritional status, reaching the normal range. Six pregnant women (30%) showed no significant improvement. Influencing factors included a dislike of the taste of food (RL, interview, February 25, 2025), complaints of nausea (HP, interview, February 25, 2025), and irregular consumption.

Discussion

Input Aspect

Human Resources (Man)

Research findings indicate that the implementation of the local Recovery Supplemental Feeding Program (PMT-P) at the Kota Barat Community Health Center (Puskesmas) was supported by nutrition officers, health cadres, and pregnant women with special needs (KE) as beneficiaries. Theoretically, the availability and competence of human resources (HR) are the primary determinants of health system effectiveness. This aligns with Law Number 17 of 2023 concerning Health, which emphasizes the responsibility of health workers in improving service quality.

The limited availability of nutrition workers, despite their training, suggests that the quality of their competencies can compensate for the limited quantity of personnel. This finding is consistent with Sugiyanto et al., (2025), who stated that the availability of human resources, particularly nutrition workers, is a key factor in the program's success. However, the limited number of personnel remains a structural obstacle that could potentially impact the intensity of monitoring and mentoring. In the context of interventions for pregnant women with Special Economic Zones (KE), the Decree of the Minister of Health of the Republic of Indonesia Number 369 of 2007 concerning

professional standards for midwives emphasizes the importance of cross-professional collaboration, including referrals and joint monitoring between midwives and nutrition workers. Thus, program effectiveness is determined not only by the availability of human resources, but also by coordination and proportional distribution of the workload.

Source of Funds (Money)

Program funding from the Gorontalo City Health Office, supported by Health Operational Assistance (BOK), demonstrates adequate fiscal support. Normatively, this mechanism aligns with Regulation of the Minister of Health of the Republic of Indonesia Number 74 of 2020 concerning Minimum Service Standards in the Health Sector, which regulates the financing of community nutrition programs through the National Budget (APBN) and Regional Budgets (APBD).

Systematic budget management, from receipt and procurement to distribution through cadres, demonstrates compliance with the local PMT-P Technical Guidelines (Juknis). However, despite the relatively large allocation of funds, budget distribution has not fully addressed operational needs in the field, particularly regarding transportation and coverage. This indicates that nominal budget adequacy does not necessarily translate to effective implementation without adaptive distribution planning.

Facilities and Infrastructure (Machine)

The availability of facilities such as manual foot scales, measuring tapes, ANC rooms, prenatal classes, and educational media indicates that the program's basic infrastructure has been met. Conceptually, facilities and infrastructure function as enabling factors in health interventions. This finding aligns with Wulandari & Sumanti (2022), who emphasized that adequate supporting facilities play a critical role in the success of health programs.

However, the evaluation demonstrated the need to optimize facility utilization and strengthen logistical support. The availability of facilities without effective utilization management can reduce program efficiency. Therefore, operational management is crucial in maximizing the role of existing facilities.

Program Target (Market)

The program's specific targets are pregnant women with a LiLA <23.5 cm or anemia, identified through routine examinations at community health centers (Puskesmas) and integrated health posts (Posyandu). This anthropometric-based targeting demonstrates alignment with the principles of risk-based nutrition intervention.

The program was implemented over three months with regular monitoring of body weight and LiLA. This approach is consistent with local PMT-P guidelines (2023), which emphasize adjusting the amount and type of supplementary food to meet the nutritional needs of pregnant women. The integration of supplementary food provision and nutrition education strengthens the promotive-preventive approach. However, the program's success remains highly dependent on adherence to consumption and the continuity of food supplies.

Service Method (Method)

The implementation of local PMT-P is integrated with Antenatal Care (ANC) services, which include screening, counseling, education, and distribution of supplementary food. This approach aligns with the 2023 PMT Technical Guidelines, which emphasize nutritional supplementation as the primary strategy for meeting the nutritional needs of pregnant women.

Mohammedsanni et al., (2025) stated that PMT distribution conducted simultaneously with integrated ANC examinations increases the effectiveness of the intervention because it allows for simultaneous screening and counseling. Furthermore, Balcha et al., (2023) showed that regular ANC visits play a crucial role in preventing anemia. These findings are supported by Olloqui-Mundet et al., (2024) who demonstrated the effectiveness of educational media in improving nutritional knowledge of pregnant women, and Fransisca et al., (2025) who found a significant relationship between ANC frequency and a reduced risk of high-risk pregnancies.

Material (Local PMT-P)

Based on the 2024 Technical Guidelines for Local PMT (PMT-P), the composition of locally sourced PMT-P is tailored to the nutritional needs of pregnant women with special economic zones (KE), including sources of carbohydrates, protein, healthy fats, vitamins, and minerals. The use of local ingredients such as nuts, fish, and tubers increases acceptability because it better aligns with cultural preferences.

The use of fresh consumables supports food quality and safety. However, some pregnant women report boredom with menu variety. This suggests that menu innovation is a strategic aspect in maintaining dietary compliance, which ultimately determines the success of the intervention.

Process Aspects

Planning

Program planning based on nutritional surveillance data demonstrates an evidence-based approach to target setting. Coordination between community health centers (Puskesmas), the Health Office, and the Ministry of Health strengthens legitimacy and budget support. These findings align with those of Famodu et al. (2021), who emphasize the importance of planning, implementation, and evaluation as part of the health program management cycle. Furthermore, Pellegrini & Lovati (2025) emphasized that collaborative planning among stakeholders significantly contributes to the success of local PMT-P programs.

Implementation

The distribution of local food ingredients in ready-to-cook packages accompanied by nutritional counseling represents a comprehensive intervention approach. This strategy allows pregnant women not only to receive additional nutrition but also to gain increased knowledge. However, constraints on the availability of local ingredients and the geographic distance of the target population remain limiting factors in the distribution's effectiveness.

Monitoring and Supervision

Monitoring is conducted in stages by the Health Office every three to six months and by community health centers every two weeks for three months. This mechanism aligns with the local PMT-P Technical Guidelines (2023). The involvement of cadres in field visits strengthens the participatory monitoring function. However, transportation limitations and the distance to target homes have the potential to reduce the intensity of monitoring.

Recording and Reporting

The recording system uses a combination of manual and electronic methods through the EPP-GBM and Integrated Nutrition Management System. This dual approach improves data accuracy and accountability. However, evaluations indicate that the consistency of consumption recording by cadres still needs improvement. This is crucial

because consumption data forms the basis for evaluating the effectiveness of interventions.

Output Aspects

Program Achievements

The program demonstrated that 70% of pregnant women (14 out of 20) successfully exited the Special Economic Zone (KEK) category, while 30% remained in the Special Economic Zone (KEK) category. This achievement indicates a significant level of effectiveness compared to the previous approach, which relied solely on national biscuits. Innovations since August 2023, through a local food-based approach, have enhanced the variety and increased acceptability.

These findings are consistent with Ren et al., (2025) who reported an average weight gain of 3.8 kg after 12 weeks of intervention, as well as improvements in hemoglobin levels. Sari et al., (2025) also showed a significant reduction in the prevalence of CED in Temanggung Regency, with success factors being government commitment, funding availability, and human resources. Similarly, Putri et al., (2024) found a significant increase in weight and LiLA in a pretest-posttest design, while Yurnila et al., (2024) reported that 80% of pregnant women experienced an increase in hemoglobin levels.

The alignment of this study's findings with previous findings strengthens the argument that locally sourced PMT is effective in improving the nutritional status of pregnant women living in areas with special economic zones (KE). However, success is not automatic; compliance, family support, economic conditions, and menu variety are important determinants.

Nutritional Status of Pregnant Women with Special Needs

An average weight gain of 1.5–2 kg per month, improvements in infant and child health (LILA), and hemoglobin levels indicate a positive physiological response to the intervention. In addition to impacting mothers, the program also contributed to a reduction in low birth weight (LBW) cases. This supports the First 1,000 Days of Life (HPK) framework as a critical period for nutrition intervention.

Although the majority experienced improvement, some mothers did not show significant changes due to low adherence to consumption and menu saturation. These findings confirm that program effectiveness is determined not only by the availability of interventions, but also by consumption behavior and the quality of cadre support.

Research Obstacles and Limitations

The main obstacles to the study were the limited attendance of pregnant women at integrated health posts (Posyandu) and the busy schedules of nutrition workers, which could potentially impact data completeness. Furthermore, the study's scope failed to explore external factors such as economic conditions, family consumption patterns, and social support, and it lacked comparisons with other nutrition interventions.

These limitations imply that the research results place more emphasis on evaluating program implementation than on comprehensive analysis of the determinants of success. Therefore, further research with a comparative design and a quantitative-analytical approach is recommended to strengthen evidence of the effectiveness of local PMT-P.

CONCLUSION

This study concludes that the implementation of the local Recovery Supplemental Feeding Program (PMT-P) at the Kota Barat Community Health Center (Puskesmas) has been running according to the input-process-output framework and has shown a real contribution to improving the nutritional status of pregnant women with Chronic Energy Deficiency (CED). In terms of input, the availability of human resources, funding support from the central and regional governments, and relatively adequate infrastructure have become the foundation of program implementation. The main obstacles identified lie not in the availability of policies or budgets, but rather in operational aspects, particularly limited transportation for distribution and monitoring. In terms of process, planning based on nutritional surveillance data and the utilization of local foods with high nutritional value demonstrate a contextual and adaptive approach to regional potential. In terms of output, the program has been proven to contribute to improving the nutritional status of pregnant women with CED and reducing the risk of low birth weight (LBW), thus having strategic implications in supporting stunting prevention efforts and strengthening interventions during the First 1,000 Days of Life. The practical implications of these findings confirm that the local food-based PMT-P model can be used as a sustainable strategy in nutritional interventions for pregnant women, especially when supported by a consistent monitoring system and cross-sector collaboration. Strengthening logistical distribution, innovating menu variations, and optimizing the role of cadres are key factors in increasing the program's effectiveness at the primary care level. Policy-wise, this approach can be replicated in areas with similar characteristics, while still considering local food potential and resource capacity. This study is limited by its focus on a single community health center, which limits the generalizability of the findings. Furthermore, the study did not quantitatively analyze the relationship between adherence levels, socioeconomic factors, and the degree of improvement in nutritional status, thus failing to comprehensively explain the determinants of success. Based on these limitations, further research is recommended to use quantitative or mixed methods designs to inferentially test the effectiveness of local PMT-P, including analysis of adherence factors and the influence of family support. Comparative studies across regions are also needed to evaluate the consistency of results and identify best practices in managing PMT-P using local ingredients. At the implementation level, developing innovative menus based on local foods and strengthening digital-based monitoring systems are recommended to enhance the program's sustainability and impact .

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