

Revitalizing post-flood nutrition services through the posyandu rasa pesta community empowerment program in sipirok, Indonesia

Haslinah Ahmad^{1*}, Ahmad Riza Siregar², Fatma Mutia³, Adi Antoni⁴

¹ Universitas Aafa Royhan, Padangsidempuan, North Sumatra, Indonesia

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post-disaster health services;
Posyandu;
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ABSTRACT

Background: Flood-related disruptions can undermine the continuity of community-based nutrition services, particularly child growth monitoring, nutrition education, and caregiver participation in integrated health posts (Posyandu). Strengthening community engagement and local service capacity is essential for restoring these services in disaster-affected areas. Objective: To describe the implementation and documented outcomes of the “Posyandu Rasa Pesta” community empowerment program in revitalizing post-flood nutrition services in Sipirok, Indonesia.

Methods: A descriptive community engagement approach was implemented at Posyandu Kenanga 1, Sipirok, North Sumatra, Indonesia. The program integrated cadre capacity strengthening, family-centred service activities, nutrition education, promotion of locally sourced supplementary foods, and improved service documentation. Pre-test and post-test assessments involving 33 respondents evaluated social empowerment/service quality and management capacity. Data were analysed descriptively using mean percentage scores and percentage-point differences. Monthly Posyandu records from June to October 2026 were also reviewed.

Results: Social empowerment/service quality scores increased from 40% at pre-test to 75% at post-test, representing a 35-percentage-point improvement. Management capacity scores increased from 35% to 75%, representing a 40-percentage-point improvement. Monthly records consistently listed 33 children under five across five reporting periods. Educational materials and practical service guidelines were also documented as program outputs.

Conclusion: The “Posyandu Rasa Pesta” program was associated with improvements in assessed empowerment and management scores and produced practical resources for community-based nutrition service revitalization. However, the descriptive design does not establish causal effectiveness or improvements in child nutritional status. Further evaluation is needed to assess service continuity and sustainability.

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*Corresponding author: email: d.haslinahahmad75@gmail.com



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INTRODUCTION

Child malnutrition remains a major public health challenge, particularly in communities experiencing socioeconomic vulnerability and disruptions to essential health services. According to the 2025 Joint Child Malnutrition Estimates released by UNICEF, the World Health Organization (WHO), and the World Bank Group, approximately 150.2 million children under five years of age were affected by stunting globally in 2024, representing 23.2% of the under-five population. An additional 42.8 million children experienced wasting, highlighting the continuing burden of inadequate nutrition and preventable childhood health risks (Abdulai, 2025). These conditions reflect not only insufficient dietary intake but also broader challenges involving household food security, access to healthcare, caregiving practices, and the continuity of preventive services (Akter et al., 2026).

Indonesia continues to face substantial nutritional challenges despite improvements in national indicators. The 2024 Indonesian Nutritional Status Survey (SSGI) reported that the national prevalence of stunting decreased from 21.5% in 2023 to 19.8% in 2024 (Ministry of Health of the Republic of Indonesia, 2025). Although this decline indicates progress, nearly one in five Indonesian children under five remained affected by stunting. Sustaining improvements requires accessible nutrition services, effective caregiver education, and regular growth monitoring, particularly in communities where environmental and socioeconomic conditions may interfere with routine healthcare delivery.

Community-based health services play an important role in addressing these challenges. In Indonesia, integrated health posts, commonly known as Posyandu, provide a platform for child growth monitoring, nutrition counselling, health promotion, and early identification of nutritional problems (Bogler et al., 2026). Their effectiveness depends on active community participation, competent health cadres, adequate service organization, and reliable recording systems. The integration of primary healthcare services further emphasizes the importance of strengthening community-level service delivery and maintaining continuity between Posyandu and primary health centres. (Bonis-Profumo et al., 2021) also highlights the importance of appropriate complementary feeding during the first two years of life, when inadequate dietary practices may contribute to growth faltering and micronutrient deficiencies.

Natural disasters introduce additional challenges to community-based nutrition services. Flooding can disrupt transportation, household livelihoods, food availability, and access to routine healthcare. Families recovering from disasters may prioritize immediate economic and household needs, potentially reducing their participation in preventive health activities (Borges do Nascimento et al., 2025). These disruptions are particularly concerning for young children who require regular nutritional assessment and age-appropriate feeding. Restoring services after flooding therefore involves more than reopening health facilities; it also requires rebuilding community participation, strengthening local service capacity, and ensuring that nutrition education remains accessible and relevant to affected families (Cheney et al., 2025).

These challenges were identified at Posyandu Kenanga 1, located in Dusun Pengkolan, Desa Luat Lombang, Sipirok District, South Tapanuli Regency, North Sumatra, Indonesia, within the service area of Puskesmas Danau Marsabut. According to the initial program proposal, post-flood conditions were associated with reduced caregiver participation, irregular child growth monitoring, limited supplementary feeding practices, and insufficient understanding of balanced nutrition and complementary feeding. The proposal estimated that approximately 40% of the target children participated in Posyandu activities; while weighing and growth recording were

conducted approximately once every three months. These figures represent the situation described during program planning rather than independently verified baseline measurements. The difficulties experienced by this partner community demonstrate the interconnected nature of service delivery, caregiver engagement, and cadre capacity. Irregular attendance may limit opportunities for early identification of nutritional problems, while inconsistent recording can complicate follow-up and monitoring. Similarly, nutrition education may have limited practical value when recommendations are not adapted to locally available foods and household circumstances. Addressing these challenges requires an approach that strengthens routine service procedures while encouraging families to participate actively in their children's health and nutrition.

The posyandu rasa pesta community empowerment program was developed in response to these identified needs. The approach combines essential Posyandu services with a more interactive, welcoming, and family-centred environment. Its activities include strengthening cadre competencies, providing practical nutrition education, promoting supplementary foods prepared from locally available ingredients, developing educational materials, and improving service documentation. Rather than replacing established healthcare procedures, the program seeks to make routine services more accessible, engaging, and manageable for community members and local cadres. The program also emphasizes the importance of sustainability through practical resources, including service guidelines, educational modules, supplementary feeding materials, and recording tools. These resources are intended to support cadres in organizing activities and maintaining service continuity beyond the direct involvement of the university engagement team. However, their contribution to long-term service performance requires further evaluation using documented participation, service-quality, and child growth indicators.

This community engagement activity aimed to support the revitalization of post-flood nutrition services at posyandu kenanga 1 through the posyandu rasa pesta community empowerment approach. Specifically, it sought to strengthen cadre capacity and service organization, improve caregiver access to practical nutrition education, promote locally sourced supplementary feeding, and support more consistent growth-monitoring documentation. The article describes program implementation, documented outputs, and available descriptive changes in social empowerment, service quality, and management capacity, while identifying priorities for sustainable community-based nutrition services in disaster-affected settings.

METHOD

This article uses a descriptive community-engagement report based on the program proposal, progress-report materials, documented educational products, and available Posyandu recording summaries for June–October 2026. The activity was conducted at Posyandu Kenanga 1, Dusun Pengkolan, Desa Luat Lombang, Sipirok District, South Tapanuli Regency, North Sumatra, Indonesia. The target groups were Posyandu cadres and mothers or caregivers of children under five. The program was coordinated by Haslinah, with Ahmad Riza Siregar and Fatma Mutia as team members. The program was funded through a community-engagement grant with an approved budget of IDR 38,390,000. The implementation framework comprised five linked stages: (1) coordination and socialization with the partner; (2) cadre strengthening and preparation of practical guidance; (3) application of service and educational innovations, including nutrition education and promotion of supplementary foods using local ingredients; (4) mentoring, documentation, and monitoring; and (5) evaluation and planning for continuation.

These stages were intended to respond to the partner's reported challenges in service continuity, participation, nutrition education, supplementary feeding, and cadre capacity. Program outputs were reviewed descriptively. Available monthly records were summarized by month and date, and the number of children listed in the records was counted. Product outputs were identified from the files developed for the program: the posyandu rasa pesta module, a post-disaster Posyandu service standard operating procedure (SOP), a locally sourced supplementary-food booklet, nutrition education media or leaflets, and a toddler Posyandu poster. The review distinguished documented outputs from outcomes requiring separate measurement.

Two pre-test/post-test summary files were provided for descriptive analysis: one addressing social empowerment/service quality and one addressing management capacity. Each file reported 33 respondents and a 20-item instrument scored 1 for a correct response and 0 for an incorrect response; percentage scores were calculated as the total correct responses divided by 20 and multiplied by 100. The analysis compared the reported mean pre-test and post-test percentages and expressed change as percentage-point differences. No inferential test was performed because this manuscript reports descriptive change only. The files' explanatory worksheets still contain wording that labels the datasets as "simulation/example"; although the program team has confirmed that the figures are real, that metadata should be corrected in the source workbooks and the raw records, instrument, and scoring procedure retained for audit before journal submission. No anthropometric outcome dataset was available, so child growth effects were not assessed.

RESULT

Partner context and service-strengthening response

The program addressed five connected needs described in the proposal: restoring routine Posyandu activity after flooding, strengthening participation by mothers and caregivers, improving nutrition education and supplementary-food practices, reinforcing cadre skills, and improving service documentation. The "Posyandu Rasa Pesta" approach treated these needs as connected rather than as separate activities. For example, a family-friendly service environment was intended to support participation, while nutrition messages and locally relevant food examples were intended to make counselling more practical. The module and SOP were developed as tools to help cadres organize the service and repeat key steps after the project period.

The response aligns with the role of community-based primary care platforms in connecting families with routine preventive services. The Indonesian integrated primary-care model emphasizes a sequence from registration and measurement to recording, counselling, and data validation (Kementerian Kesehatan Republik Indonesia, 2023). In the present program, the emphasis was on reinforcing the routine service platform and making nutrition communication more accessible. Because a controlled comparison was not conducted, the current report should be understood as an implementation account rather than an effectiveness evaluation.

Documented monthly Posyandu records

The available recording book contained lists of 33 children under five for each of five monthly periods between June and October 2026. Table 1 summarizes the dates and the number of children listed. The same number of listed children across months indicates that the recording

list was maintained, but it does not by itself establish individual attendance, unique attendance across months, completeness of growth measurements, or improvement in nutritional status.

Table 1. Monthly Posyandu records available for June–October 2026

Recording period	Date recorded	Children listed in the record
June 2026	4 June 2026	33
July 2026	2 July 2026	33
August 2026	6 August 2026	33
September 2026	3 September 2026	33
October 2026	4 October 2026	33

For a stronger outcome analysis, future reporting should distinguish the number of children registered, the number who attended on each date, the number weighed and measured, the number with complete growth records, and the number referred for follow-up when indicated. Such indicators would allow the partner and implementation team to assess service continuity more accurately. A complete register with unique child identifiers and attendance marks is needed before attendance rates or month-to-month retention can be calculated.

Educational and practical products

Five principal product types were documented in the program files. First, the “Posyandu Rasa Pesta” module provides practical guidance on the concept, service flow, cadre roles, nutrition education, interactive activities, recording, monitoring, and continuation. Second, the post-disaster Posyandu service SOP is intended to support a more consistent sequence of service activities. Third, the “Booklet PMT Sehat Berbasis Pangan Lokal” presents supplementary-food ideas using local foods. Fourth, nutrition education media and leaflets provide concise messages for caregivers. Fifth, the toddler Posyandu poster offers visual information to support communication at the service site. These products are implementation outputs, not direct proof that users adopted them or that they changed health outcomes. Their practical value will depend on whether cadres use them during routine sessions, whether the content is understood by caregivers, and whether the products are updated when service guidance changes. The supplementary-food content is consistent with the general principle that complementary foods should be age-appropriate, nutritionally adequate, safely prepared, and offered responsively (Dahal et al., 2026). However, the existence of a booklet alone does not establish changes in household feeding practices.

Digital recording through a simple Google Form or spreadsheet was also considered as a supporting innovation. At the reporting stage, manual recording remained in use, and digital recording was still being developed incrementally. This distinction is important: the manuscript does not claim that a complete digital monitoring system had already replaced the paper record. A realistic next step is to pilot a simple digital register alongside the manual system, verify data completeness, train cadres, and agree on responsibility for data entry and review.

Figure 2. Program educational products: (a) Posyandu Rasa Pesta poster; (b) local-food supplementary feeding booklet; (c) educational media; and (d) program poster.



Community participation and empowerment

The program was designed around a community service platform that already exists in the partner area. Cadres are central to organizing sessions, communicating with caregivers, supporting measurement and recording, and sustaining activities between visits by the university team. The educational products are therefore intended to function as job aids rather than as stand-alone publications. Mothers and caregivers are the intended participants in nutrition communication and child growth monitoring, while the cadres are the principal local actors for continuity. Empowerment should be assessed through demonstrated capacity and continued use, not only through the number of products distributed. Relevant indicators include whether cadres can follow the SOP independently, explain key nutrition messages, complete growth records accurately, use the booklet during counselling, and organize the service on schedule. Caregiver-level indicators could include participation, comprehension of nutrition messages, and reported use of recommended feeding practices. These outcomes were not quantified in the records available for this draft, so they are presented as priorities for subsequent evaluation rather than achieved results.

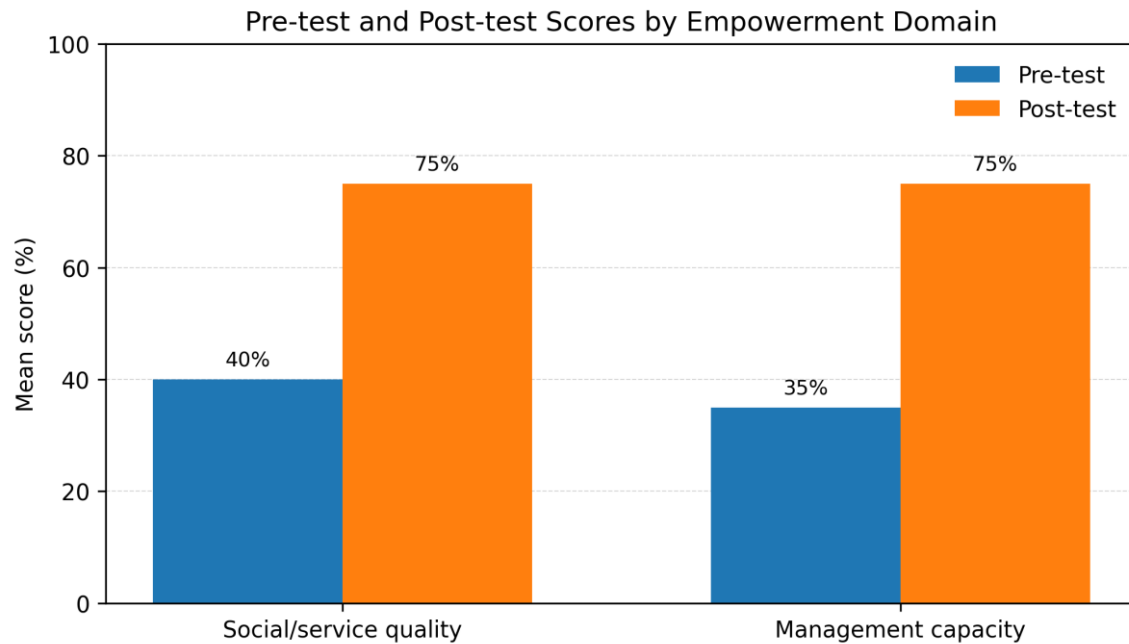
Figure 3. Documentation of program implementation: (a) group activity with the community; (b) nutrition education and service interaction; (c) caregiver and cadre engagement; and (d) child growth-monitoring activity.



Pre-test and post-test changes in empowerment domains

The descriptive summaries showed improvement in both assessed domains among 33 respondents. For social empowerment/service quality, the mean score increased from 40% at pre-test to 75% at post-test, equivalent to a 35-percentage-point increase. For management capacity, the mean score rose from 35% to 75%, equivalent to a 40-percentage-point increase (Table 2). These changes suggest that the post-program assessment recorded higher scores in both domains. They should not be interpreted as percentage increases in the number of participants or as proof of a causal program effect.

Figure 1. Comparison of mean pre-test and post-test scores in social/service quality and management capacity.



Note. Scores are reported as percentages. Social/service quality increased from 40% to 75% (+35 percentage points), while management capacity increased from 35% to 75% (+40 percentage points).

Table 2. Descriptive pre-test and post-test scores for empowerment domains

Domain	Pre-test mean	Post-test mean	Change
Social empowerment/service quality	40%	75%	+35 percentage points
Management capacity	35%	75%	+40 percentage points

Values are the reported mean percentages from the supplied summary workbooks (n = 33 for each domain). The original workbooks should be retained with the instrument and scoring records for verification.

Interpretation, limitations, and implications

The main contribution documented to date is the development of a locally oriented service package combining a family-friendly approach, practical guidance for cadres, nutrition education, local-food supplementary feeding messages, and routine recording. The package responds to the partner's stated needs and provides materials that can be used in future sessions. This is a useful implementation foundation because community-based nutrition services require both a service process and understandable communication tools. Several limitations restrict the conclusions. First, the available records are descriptive and do not include a comparison group, so the pre-test/post-test changes cannot be attributed solely to the program. Second, although summary scores for 33 respondents are available in each empowerment domain, the source workbooks' explanatory sheets still label the data as simulation/example; this inconsistency in documentation

must be corrected and the underlying records and instrument retained for verification. Third, complete attendance data and anthropometric results were not available for analysis, so the program's effect on attendance or child growth and nutritional status cannot be assessed. Fourth, the digital recording system was still at a development stage. Finally, the baseline figures in the proposal are program-reported context and should not be treated as independently measured outcomes.

Future implementation should use a simple monitoring plan agreed with the cadres and primary health centre. At minimum, it should document session dates, eligible children, attendance, completed measurements, completeness of growth records, nutrition counselling delivered, cadre participation, and referrals. If a knowledge or skills intervention is evaluated, the same clearly described instrument should be administered before and after training, with the scoring method and denominator reported. These steps would make it possible to move from documenting activities and products to evaluating implementation quality and outcomes.

DISCUSSION

Interpretation of Community Empowerment Outcomes

The findings of the posyandu rasa pesta community engagement program indicate positive changes in the assessed dimensions of social empowerment, service quality, and management capacity following program implementation. Among the 33 respondents included in each assessment domain, the mean social empowerment/service quality score increased from 40% to 75%, representing a 35-percentage-point difference. Similarly, the management capacity score increased from 35% to 75%, corresponding to a 40-percentage-point difference. These findings suggest improvements in the assessed domains during the implementation period, although the descriptive evaluation design does not establish that the changes resulted exclusively from the intervention. The observed differences are relevant to the challenges initially identified at Posyandu Kenanga 1. Following flood-related disruptions, the partner community experienced difficulties maintaining regular growth monitoring, caregiver participation, nutrition education, and service documentation. The program addressed these interconnected concerns through cadre support, educational resources, and a more family-friendly approach to service delivery. The higher post-test scores may reflect improved understanding of service organization and community engagement principles. Nevertheless, the available data do not distinguish knowledge acquisition from demonstrated practical competence or sustained behavioural change (Heckert et al., 2019).

These findings can be interpreted alongside the broader literature on community health workers. (Hadisuyatmana et al., 2021) emphasized the contribution of community health workers to expanding healthcare access and strengthening community-based health interventions. Their review also highlights the importance of integrating community health workers into functional health systems. In the present program, Posyandu cadres occupied a similarly important position as local facilitators who could support nutrition education, growth monitoring, and communication with caregivers. However, the program's descriptive findings cannot be directly equated with the effectiveness outcomes reported in broader community health worker research (He et al., 2026).

Strengthening Posyandu Services Following Flood-Related Disruption

An important contribution of the program was its focus on restoring routine nutrition services within an existing community health structure rather than establishing a separate

intervention platform. This approach is relevant in disaster-affected communities because service recovery requires both operational readiness and renewed community engagement. The “Posyandu Rasa Pesta” concept sought to make routine services more welcoming and interactive while retaining established procedures for child measurement, recording, nutrition counselling, and follow-up. The available monthly records listed 33 children under five during each of five reporting periods from June to October 2026. These records provide evidence that a child registration list was maintained throughout the documented period. However, the consistency of the recorded number does not necessarily indicate that all children attended each session or received complete anthropometric assessments. Therefore, the findings should be interpreted as evidence of documentation continuity rather than verified improvements in attendance or service coverage.

This distinction is important when evaluating community health programs. Maintaining a register represents an operational achievement, but demonstrating service recovery requires additional indicators, including actual attendance, completed growth measurements, counselling coverage, and appropriate referral practices. The program provides an initial foundation for improving these processes, while further monitoring is necessary to establish whether the activities produce sustained improvements in service utilization.

Nutrition Education and Locally Sourced Supplementary Feeding

Nutrition education and the promotion of supplementary foods prepared from locally available ingredients were central components of the intervention. These activities responded to the partner's reported difficulties involving caregiver understanding of balanced nutrition, complementary feeding, and practical food preparation. The development of educational leaflets, supplementary feeding materials, and the “Posyandu Rasa Pesta” module provided resources that cadres could potentially incorporate into routine counselling. The relevance of this approach is supported by (Ingabire-Gasana & Murimi, 2025), which identifies complementary feeding between 6 and 23 months of age as a critical period for healthy growth and development. The guideline emphasizes dietary diversity, nutrient adequacy, age-appropriate food preparation, and responsive feeding practices. These recommendations provide an evidence-based foundation for community nutrition education and highlight the importance of adapting feeding guidance to household circumstances (Katiyatiya & Nanywa, 2026).

Locally sourced foods may offer practical opportunities to translate nutrition recommendations into familiar household practices. Nevertheless, the nutritional quality of supplementary foods depends on their ingredients, preparation methods, portion sizes, and suitability for children's ages and dietary needs (Lecoutere et al., 2023). Local availability alone does not guarantee adequate nutritional composition. Accordingly, supplementary feeding materials should be assessed against established dietary recommendations before being promoted for routine use (Makwela et al., 2026). The program documented the development of educational products but did not measure changes in dietary diversity, household feeding practices, nutrient intake, or child nutritional status. Consequently, the findings support the feasibility of producing locally oriented educational resources rather than demonstrating the nutritional effectiveness of the supplementary feeding component (Ndagijimana et al., 2027).

Cadre Capacity and Community-Based Service Management

The improvement in management capacity scores, from 35% to 75%, represents the largest descriptive change reported in the program evaluation. This finding is particularly relevant

because effective Posyandu services require consistent scheduling, clear task distribution, accurate recording, communication with caregivers, and coordination with primary healthcare providers.

Cadres play a central role in translating program objectives into routine activities. Their responsibilities extend beyond assisting with anthropometric measurements to include mobilizing families, delivering understandable health information, maintaining records, and identifying situations requiring professional follow-up. The development of service guidelines and operational materials may support these responsibilities by providing more consistent references for routine practice. (Okogun, 2026) describe community health workers as an important component of healthcare delivery, particularly where access to formal services is constrained. Their findings support the rationale for strengthening cadre capacity rather than relying exclusively on externally delivered activities (Pathak et al., 2025). Within the “Posyandu Rasa Pesta” program, the use of practical modules and service procedures was intended to reinforce local ownership and support continuity after university-led activities ended.

However, improved assessment scores should not be interpreted as direct evidence that cadres independently performed all service procedures correctly. Demonstrating practical competence would require structured observation, standardized performance checklists, and repeated assessments during routine Posyandu sessions. Future evaluations should therefore distinguish between knowledge, procedural competence, and actual service performance.

Sustainability and Integration with Primary Healthcare

The sustainability of community empowerment programs depends on whether their activities and resources can be maintained after the initial implementation period. In this program, sustainability was addressed through the development of educational materials, a post-disaster service standard operating procedure, and practical recording resources. These products were designed to assist cadres in continuing nutrition education and service organization. The connection between Posyandu Kenanga 1 and Puskesmas Danau Marsabut provides an existing institutional context for strengthening continuity of care (Yao et al., 2026). Within Indonesia's integrated primary healthcare framework, community-based services are expected to contribute to preventive care, early identification of health problems, and appropriate referral. Strengthening documentation and communication between Posyandu cadres and primary healthcare personnel could support these functions.

The program also identified opportunities for gradual digitalization of service records. A simple electronic register could potentially improve data organization, facilitate follow-up, and reduce difficulties associated with fragmented manual documentation (Yang et al., 2025). However, digital tools require adequate infrastructure, cadre training, clear data-management responsibilities, and appropriate protection of personal health information. Since digital recording remained under development, its operational effectiveness cannot yet be evaluated (Pienaa et al., 2025). Long-term sustainability should therefore be assessed through measurable indicators, including the regularity of Posyandu sessions, cadre participation, completeness of child growth records, caregiver attendance, and continued use of educational materials. Institutional support from the primary healthcare centre and community stakeholders will be important for maintaining these activities (Singh et al., 2026).

Program Limitations and Implications for Future Implementation

Several limitations should be considered when interpreting the findings. First, the program used a descriptive evaluation without a comparison group, preventing causal attribution of the observed pre-test and post-test differences. Second, the available summaries included 33 respondents for each assessment domain, but detailed participant characteristics and instrument validation information were not available (Wouk et al., 2025). Third, inconsistencies in the explanatory metadata of the original assessment workbooks require reconciliation with the underlying records before the results can be considered fully verified (Waid et al., 2022). Furthermore, the monthly Posyandu records documented registered children but did not provide sufficient information to calculate attendance rates, service coverage, or individual follow-up outcomes. Anthropometric data were also unavailable for analysis, preventing assessment of changes in child growth or nutritional status (Verma et al., 2025). The findings therefore relate primarily to documented implementation outputs and descriptive assessment scores.

Despite these limitations, the program provides a locally grounded framework for organizing community-based nutrition services following flood-related disruption. Its integration of cadre support, family-centred activities, nutrition education, locally sourced supplementary feeding materials, and service documentation offers practical components that may be adapted to similar community settings (Suprpto et al., 2024). Future implementation should incorporate standardized assessment instruments, structured observations of cadre performance, individual attendance records, and complete anthropometric monitoring. Longer-term evaluation would help determine whether improvements in assessment scores are sustained and whether the program contributes to measurable changes in service continuity, caregiver practices, and child nutrition outcomes (Susanto et al., 2026).

The posyandu rasa pesta initiative illustrates how community engagement can be organized around existing primary healthcare structures to address service disruptions. The observed improvements in empowerment and management scores are encouraging preliminary findings, but stronger evaluation designs and verified outcome data are required to determine the program's effectiveness and sustainability.

CONCLUSION

The posyandu rasa pesta community empowerment program contributed to efforts to revitalize community-based nutrition services following flood-related disruptions in Sipirok, Indonesia. Through cadre capacity strengthening, family-centred nutrition education, promotion of locally sourced supplementary foods, and improved service documentation, the program addressed several challenges experienced by Posyandu Kenanga 1. Descriptive assessments involving 33 respondents showed an increase in social empowerment and service quality scores from 40% to 75%, representing a 35-percentage-point improvement, while management capacity scores increased from 35% to 75%, representing a 40-percentage-point improvement. Monthly Posyandu records also consistently listed 33 children under five across five reporting periods from June to October 2026. These findings suggest positive changes in the assessed empowerment domains and demonstrate the availability of practical educational and operational resources. Nevertheless, the descriptive evaluation design does not establish a causal relationship between program activities and the observed improvements, nor does it provide evidence of changes in children's nutritional status.

To ensure program sustainability, continued collaboration among Posyandu cadres, Puskesmas Danau Marsabut, local government, and community stakeholders is essential. Regular mentoring, ongoing nutrition education, and consistent application of the developed service guidelines should be integrated into routine Posyandu activities. Particular attention should be given to strengthening caregiver participation, maintaining accurate growth-monitoring records, and promoting nutritionally appropriate supplementary feeding practices using locally available ingredients. The gradual adoption of simple digital recording tools may further support service coordination and monitoring. Future evaluations should incorporate validated assessment instruments, systematic attendance records, complete anthropometric measurements, and longer follow-up periods to determine whether the observed improvements can be sustained and translated into measurable changes in service quality, caregiver practices, and child nutritional outcomes.

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Conflict of Interest

The authors declare that they have no conflicts of interest related to the implementation, funding, or publication of this community engagement program.

Declaration of Generative AI Use

The authors used OpenAI's ChatGPT to assist with language refinement, grammatical correction, and improving manuscript clarity and organization. All AI-assisted content was reviewed and revised by the authors, who take full responsibility for the accuracy, originality, and integrity of the published work.

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