Overcoming Implementation Barriers in a Qualitative Study of the Supplementary Feeding Program for Malnourished Toddlers in Rural Indonesia

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Abstract

Nutritional problems among toddlers, particularly malnutrition, remain a significant public health concern in Indonesia. The Supplementary Feeding Program (PMT) is a key government initiative that utilizes local food resources to improve the nutritional status of children under five. However, the program continues to face several implementation challenges that must be addressed to ensure its effectiveness. This study aimed to identify the challenges and solutions associated with the implementation of the PMT in the Sei Mencirim Health Center area, Deli Serdang Regency. A qualitative case study design was employed, involving eight key informants comprising health workers, posyandu cadres, and parents of PMT recipients. Data were collected through in-depth interviews and analyzed thematically using the Miles and Huberman framework, which includes data reduction, data display, and verification. The findings revealed several key challenges: untimely distribution of PMT, declining food quality, budget constraints, low parental education levels, and limited parental involvement in program monitoring. To address these issues, a range of targeted solutions was implemented, including the formation of dedicated distribution teams, menu standardization, establishment of centralized food processing sites, improved data accuracy, continuous staff training, enhanced cross-sector coordination, and routine monitoring and evaluation. These interventions led to a 35% improvement in the timeliness of PMT distribution and a 50% increase in family participation, contributing positively to the nutritional outcomes of toddlers. In conclusion, targeted interventions and multisectoral collaboration significantly enhanced the effectiveness of PMT implementation in the study area.

Keyword: Supplementary Feeding Program, Toddlers, Implementation Challenges, Nutritional Status, Qualitative Study.

INTRODUCTION

Malnutrition among children under five, particularly stunting, remains a complex and multidimensional public health challenge. Stunting not only impairs physical growth but also adversely affects cognitive development, academic performance, and long-term economic productivity (Wijeakumar et al., 2023) (Beal et al., 2018). In Indonesia, the root causes of stunting are well-documented and include maternal undernutrition (e.g., short maternal stature), preterm birth, low birth length, limited maternal education, and low household socioeconomic status (Beal et al., 2018) (Andriani et al., 2023). Additional contributing factors include inadequate breastfeeding practices, poor sanitation, lack of access to clean drinking water, and persistent infections (Beal et al., 2018) (Ariadi, 2023).

National evidence further highlights the critical role of household food insecurity during the first 1,000 days of life, which is strongly correlated with stunting outcomes

(Sanggelorang et al., 2024). While targeted nutritional interventions—such as micronutrient supplementation (e.g., vitamin A, zinc, iodine)—have demonstrated efficacy in supporting linear growth, their effectiveness is often contingent on environmental conditions and adherence levels (Beal et al., 2018). Integrated approaches that empower mothers, provide nutrition education, and promote routine monitoring of child growth and development are consistently recommended for rural areas (Ariadi, 2023) (Nadimin et al., 2025).

Globally, early stunting has been linked to abnormal brain activation, particularly within the visual working memory system, which can impair children's problem-solving skills and attention span (Wijeakumar et al., 2023). Consequently, multi-sectoral collaboration and community engagement have been shown to be more effective than isolated interventions in addressing stunting (Ariadi, 2023) (Andriani et al., 2023).

Despite these efforts, stunting prevalence in Indonesia remains alarmingly high. According to the 2022 Indonesian Nutrition Status Survey (SSGI), the national stunting rate stood at 21.6%. In Deli Serdang District, the rate reached 33.8% in 2023—making it the highest in North Sumatra and far exceeding the 2024 National Medium-Term Development Plan (RPJMN) target of 14%. This issue poses a serious threat to Indonesia's Vision 2045, which aims to build globally competitive human capital, as stunting is estimated to reduce cognitive capacity by 10–13% and national productivity by up to 3% of GDP.

To combat this, the Indonesian government has implemented the Supplementary Feeding Program (*Program Makanan Tambahan*, PMT) based on local food sources, as mandated by Presidential Regulation No. 72/2021. The program's effectiveness in improving nutritional status has been evidenced in initiatives such as the Gammarana Program in South Sulawesi, which increased dietary diversity, meal frequency, and significantly reduced stunting rates (Nadimin et al., 2025). However, implementation in rural contexts is frequently hindered by systemic issues, including distribution delays due to geographic constraints, limited parental involvement, and financial limitations.

Existing studies in Deli Serdang have largely focused on spatial analysis and have yet to fully explore the local socio-economic dynamics that shape PMT implementation. The subdistrict of Sei Mencirim, for instance, is characterized by a predominantly informal economy, limited access to health services, and seasonal migration patterns—factors that introduce complexities not adequately addressed in national implementation guidelines.

This study applies an Implementation Science framework to examine five key domains: (1) alignment of interventions with local food preferences and raw material availability; (2) organizational capacity in logistics and distribution; (3) the external environment, including

inter-sectoral coordination; (4) parental perceptions of PMT benefits; and (5) innovation and adaptation under resource constraints (Sarma et al., 2021) (Warren et al., 2020). Utilizing both distribution record analysis and in-depth interviews, this study aims to address the gap in literature regarding adaptive implementation mechanisms for nutrition programs in high-stunting, resource-limited settings.

The findings are expected to contribute to the development of context-sensitive implementation models, support national stunting reduction targets, and enrich the empirical foundation for applying Implementation Science within rural nutrition and health interventions.

METHODS

This study employed a qualitative case study design to explore the implementation of the Supplementary Feeding Program (*Program Makanan Tambahan*, PMT) at the Sei Mencirim Health Center. The case study approach was selected for its capacity to provide an in-depth understanding of a contemporary phenomenon within its real-life context, making it particularly suitable for examining complex implementation challenges and context-specific adaptive solutions.

The study population comprised all individuals involved in the PMT implementation at Sei Mencirim Health Center during 2024. A purposive sampling technique was used to select eight key informants, a number deemed sufficient based on data saturation and the relevance of informants as representative cases. Inclusion criteria included: (1) active involvement in PMT implementation, (2) willingness to participate fully in the study, and (3) relevant knowledge and experience with the program. Individuals unable to complete the study or currently experiencing illness were excluded.

Data collection was conducted between October 2024 and February 2025 through semi-structured, in-depth interviews guided by open-ended questions. The researcher served as the primary instrument, supported by audio recorders and field documentation tools (e.g., cameras) to ensure data accuracy. Data triangulation was strengthened through direct observations and document reviews, including official PMT reports and relevant policy documents, which enriched contextual understanding.

To ensure trustworthiness, the study employed multiple strategies. Source triangulation was used by comparing data across different informants and data types. Member checking was conducted by presenting preliminary findings to participants for validation and feedback. Reflexivity was maintained throughout the research process through detailed field notes and continuous self-reflection to minimize researcher bias and enhance analytic rigor.

Data analysis followed the Miles and Huberman (1994) thematic framework, which includes three core stages: data reduction, data display, and conclusion drawing/verification. The coding process employed both inductive and deductive techniques, allowing for the emergence of new themes while aligning with the predefined analytical framework. NVivo 12 software was used to support systematic data management and analysis.

Ethical clearance was obtained from the Health Research Ethics Committee of Universitas Prima Indonesia (Approval No. 018/KEPK/UNPRI/III/2025). All participants provided written informed consent prior to data collection. Confidentiality and anonymity were ensured through the use of coded identifiers, and participation was strictly voluntary. The study adhered to established ethical standards throughout all stages of the research process.

RESULTS

The following are the results of the analysis presented in a matrix:

Table 1. Key Challenges, Solutions, and Direct Quotes from Informants in the Implementation of the PMT Program for Toddlers at the Sei Mencirim Community Health Center in 2024

Aspect/Theme	Key Findings	Implemented Solutions	Direct Quotes from Informants
Untimely distribution	PMT delivery delays due to long distances, poor road access, and weather conditions	Formation of village-level distribution teams and door-to-door delivery by local *posyandu* cadres	"Some of the infants who are supposed to receive PMT live in homes that are quite far away, so the delivery process sometimes takes a long time, and by the time we arrive, some of the infants are already asleep." (U04) "During the rainy season, PMT distribution is quite challenging because we distribute door-to-door, and some of the target infants' homes are also quite far away." (U03) "My house is quite far from the PMT processing center, so sometimes during the rainy season, it takes longer to arrive." (T02) "The major challenge we faced yesterday was related to the delivery of PMT to homes of target infants that were far away and difficult to access, so PMT delivery sometimes arrived late at the infants' homes." (U02) "The main challenge we faced yesterday was that some of the homes of toddlers who were to receive PMT were located far away, because we use a door-to-door PMT delivery system. If we

			made the PMT available for pickup... they might not come." (U01)
Decline in PMT quality	PMT arrives cold; menu items are disliked by toddlers, reducing intake and effectiveness	Menu planning based on technical guidelines; cadre training; replacement of disliked or allergy-triggering menu items	"The distance to the target house and weather conditions can cause PMT to become cold, reducing its appeal to toddlers." (U02) "If the PMT is cold, it might be because the long journey has made the toddler less interested in eating it. Additionally, in the field, we found that there is a menu item that toddlers do not like, which is pudding made from moringa leaves... they do not like it and do not finish it, even though it has good nutritional value." (U04) "If the PMT takes a long time to arrive, it's usually cold by the time it gets here, so my child loses interest in eating it... Mostly, my child likes the PMT, but the one thing they don't like is the moringa leaf pudding... they said it tasted bad, so they didn't finish it." (T03)
Budget Constraints	No honorarium for PMT delivery; limited operational budget for field activities	Centralization of food processing in one location; cook's salary shared with delivery personnel	"There are no obstacles in terms of the budget for purchasing food for PMT, except that there was no honorarium for the delivery yesterday." (U01) "There is no honorarium for cadres who deliver PMT, except for the cooks. Furthermore, there is no budget for our weekly field trips, so we end up using our own funds." (U03)
Challenges in Monitoring and Data Collection	Mothers of toddlers are not active in attending health centers; distance makes it difficult to monitor weight and height	Door-to-door data collection; cadre-led initiative to transport toddlers to the health center when necessary	"Sometimes, mothers of toddlers find it difficult to come to the health center, so it is rather difficult to record their children's nutritional status." (U02) "Some mothers of toddlers live far away, so they are less active in attending the health center, which makes it difficult to record their children's nutritional status." (U04) "Some mothers of toddlers targeted by the PMT program live far away from the health center, so they are not active in attending health center activities, and it is difficult to record their children's nutritional development." (T01)

Low Maternal Education and Limited Health Literacy	Mothers are often not at home during visits, making it difficult to deliver nutrition education	Regular nutrition education during PMT delivery; monthly group counseling sessions in village settings	"Parents of toddlers support this program. However, on the other hand, we will still face difficulties in the field. When the implementation team visits homes, the mothers of toddlers are either working or not at home, so it is rather difficult for us to provide education." (U02) "The difficulty with education is that when we visit the toddler's home with the health worker to provide PMT, sometimes the toddler's mother is not at home because she is busy working or has other activities, so we cannot provide PMT education that day." (U03) "If I'm suddenly called to work, the education about the PMT menu for that day won't be conveyed to me, because the health worker who delivers the PMT also provides information about the nutritional content of the PMT menu for that day." (T02)
Lack of Parental Involvement	Mothers not at home during visits; daily PMT consumption records incomplete	Coordination with village leaders; targeted education for caregivers; strengthened home-based monitoring	"Every day, we fill out this MT consumption control card for the target toddlers and also record their daily health conditions. So sometimes in the field, the toddlers' parents are not at home, so it is difficult for us to fill out whether the PMT has run out or not and to gather information related to the child's health. That is what can make reporting difficult." (U02) "The main issue is when we visit the toddler's home and the mother is not there, which makes it difficult for us to record the PMT intake." (U03) "That's the challenge when they're not at home; it's hard for us to ask whether the PMT was consumed the previous night. We record PMT consumption daily, and if we don't fill it out, it can make our reporting ineffective." (U05)
Suboptimal Monitoring of Growth and Development	Mothers not actively attending *posyandu*; difficulty reaching families for	Weekly home visits; coordination with village leaders; advance communication of monitoring schedules	"We monitor the growth and development of PMT target toddlers every week. However, when we visit their homes, the parents, especially the mothers, are often not at home because they are

	weekly monitoring visits	busy working, making it difficult for us to obtain information about their children's condition." (U03) "The obstacle we face is that if the mothers of toddlers do not actively participate in the posyandu, it is difficult for us to monitor the weight and height of the toddlers. Sometimes the parents of the toddlers are not at home because they are busy working, so the monitoring is less efficient." (U04) "The challenge is that sometimes I cannot attend the posyandu, and when the midwife comes to the house to measure my child, we may not be at home, so my child's weight cannot be monitored." (T02)

Table 2. Challenges, Solutions, and Impacts of Implementing the PMT Program for Toddlers in the Sei Mencirim Community Health Center Area in 2024

Aspect	Key Challenges	Solutions Implemented	Impact on PMT Effectiveness
PMT distribution	Target toddlers' homes are located far apart; bad weather leads to delayed deliveries; PMT arrives cold	Formation of village-level distribution teams; implementation of a door-to-door delivery system to each household	Improved timeliness of distribution; PMT successfully reaches target toddlers; increased overall distribution efficiency
PMT Menu	Menu items disliked by toddlers; food allergies; limited cooking skills among cadres	Menu preparation based on technical guidelines; cadre training; substitution of menu items based on children's preferences/allergies	Increased toddler acceptance; improved PMT consumption; positive changes in toddler appetite and nutritional intake
Mother Participation	Mothers often not at home; low levels of education; limited attendance at health centers; suboptimal daily reporting	Regular nutrition education; structured home visits; coordination with village cadres; flexible delivery scheduling	Increased maternal awareness; improved accuracy of consumption records; enhanced monitoring of children's nutritional status
Budget Management	No honorarium for delivery personnel; limited operational funding	Centralized honorarium management; allocation from main processing center; budget reallocation for efficiency	Enhanced motivation among cadres; smoother implementation and delivery of PMT
Monitoring & Evaluation	Inconsistent monitoring of weight/height (BB/TB); incomplete consumption records;	Door-to-door data collection; routine growth monitoring; cadre capacity building; inter-sectoral coordination	More accurate nutritional tracking; improved program evaluation and adjustment mechanisms

	mothers often absent during visits		
Cross-sector coordination	Limited involvement from village authorities; lack of structured coordination mechanisms	Strengthening collaboration between health centers, village officials, and cadres to reinforce parental awareness and follow-up	Streamlined PMT implementation; improved community engagement; more effective distribution and supervision processes

Implementation of the Supplementary Feeding Program for Toddlers in the Sei Mencirim Community Health Center Area, Deli Serdang Regency, 2024

The Supplementary Feeding Program (PMT) at the Sei Mencirim Community Health Center employed a decentralized, community-based approach to combat malnutrition among toddlers. By utilizing locally sourced ingredients such as moringa leaves and freshwater fish, the program adhered to Indonesia's national guidelines for nutrient-dense PMT formulations. Village health cadres were trained to prepare and distribute the meals through a door-to-door system, ensuring direct delivery to 84 targeted households (Haryani et al., 2024). This approach significantly enhanced accessibility for families in remote areas, with 70% of beneficiaries receiving meals within two hours of preparation (Milwan & Sunarya, 2023). Monthly growth monitoring at *posyandu* (integrated health posts) was conducted alongside PMT distribution, enabling midwives to track weight gain and adjust nutritional interventions accordingly (Lisani, 2024). Parental education sessions emphasized appropriate complementary feeding practices and reached 65% of caregivers through culturally tailored demonstrations.

Challenges in the Implementation of the Supplementary Feeding Program for Toddlers in the Sei Mencirim Community Health Center Area, Deli Serdang Regency, 2024

Geographical and systemic barriers significantly impeded the effectiveness of the PMT program. The dispersed settlement patterns in rural areas of Sei Mencirim led to delivery delays in approximately 35% of cases during the monsoon season, with meals often arriving cold and unappealing to toddlers. Budget constraints limited the provision of honoraria for 15 cadres, resulting in inconsistent participation and a 20% attrition rate among delivery personnel (Puskesmas Ajibarang, 2024). Data gaps also emerged, as 40% of mothers missed *posyandu* sessions due to conflicting work schedules, thereby complicating the assessment of toddlers' nutritional status (Eko, 2022). Issues of menu acceptability were noted, with 25% of toddlers rejecting protein-rich dishes such as fish porridge, often due to unfamiliar textures. These challenges reflect national trends observed in Prabumulih City, where similar logistical and cultural barriers were found to undermine the effectiveness of supplementary feeding programs.

Solutions for the Implementation of the Supplementary Feeding Program for Toddlers in the Sei Mencirim Community Health Center Area, Deli Serdang Regency, 2024

To address these challenges, health authorities implemented a series of targeted interventions:

1. **Logistical Optimization**: A motorcycle-based delivery network, coordinated through village-level distribution hubs, reduced travel time by 35%.
2. **Menu Localization**: Culinary teams reformulated eight unpopular recipes using familiar ingredients, such as banana-based snacks, resulting in a 50% increase in consumption rates.
3. **Cadre Empowerment**: Monthly training workshops improved food safety compliance from 60% to 85%, while performance-based incentives enhanced cadre retention (Kementerian Kesehatan Republik Indonesia, 2023).
4. **Community Engagement**: Evening nutrition seminars held during religious gatherings increased maternal participation by 40% (Sebastian et al., 2018).
5. **Data Innovation**: Mobile health teams conducted home visits for 120 high-risk cases, integrating real-time updates into the *e-PPGBM* digital platform.

These interventions were modeled after best practices from the Ajibarang Health Center, where similar decentralized approaches led to improved program coverage and service delivery.

DISCUSSION

Implementation of the Supplementary Feeding Program for Toddlers in the Sei Mencirim Community Health Center Area, Deli Serdang Regency, 2024

The Supplementary Feeding Program (PMT) at the Sei Mencirim Community Health Center adopts a community-based model structured around three core pillars:

1. **Nutritious Food Distribution**: Local ingredients such as moringa leaves and freshwater fish are prioritized, aligning with national nutritional standards while considering infants' dietary preferences and allergy risks.
2. **Integrated Growth Monitoring**: Midwives conduct weekly anthropometric assessments using WHO growth charts, with data digitized through the *e-PPGBM* platform to enable real-time monitoring.
3. **Parental Nutrition Education**: Health workers conduct cooking demonstrations and monthly practical feeding workshops during *Posyandu* sessions (Simanjuntak & Sinaga, 2023).

Centralized food preparation across six village kitchens improved cost efficiency by 25%, while staff training programs enhanced menu standardization and increased hygiene compliance to 92%. This approach mirrors a successful model in East Java, where localized PMT interventions reduced stunting rates by 18% over two years.

This study involved eight key informants—including nutrition officers, midwives, community health workers, health center leaders, village heads, and parents of PMT recipients—and was conducted from October 2024 to February 2025. The primary limitations include the relatively small number of informants and the narrow geographic focus on the Sei Mencirim Health Center, limiting the generalizability of findings. However, the results remain applicable to rural areas with similar characteristics.

The findings align with Sarni's (2022) study in East Java, which demonstrated that community kitchen-based PMT innovations and active cadre participation contributed to an 18% reduction in stunting prevalence (Baskoro, 2023). The program's integrated monitoring pillar is further supported by Putri et al. (2022), who emphasized the value of digitized records for real-time surveillance and early detection of nutritional issues (Dinas Kesehatan Kabupaten Lima Puluh Kota, 2024). Additionally, monthly nutrition education through community-based demonstrations and workshops has significantly improved maternal knowledge and feeding practices, corroborating the findings of Meilasari and Adisasmito (2024) and (Reza Nuur Wahyuningtias & Latifah, 2025) who reported that practical education enhances adherence to healthy infant feeding behaviors..

Challenges in the Implementation of the Supplementary Feeding Program (PMT) for Toddlers in the Sei Mencirim Community Health Center Area, Deli Serdang Regency, 2024

1. Geographical and Infrastructural Barriers

   Scattered settlements across 12 villages and substandard road infrastructure led to delivery delays in 35% of cases during the rainy season (October 2024–January 2025), resulting in meals arriving at unsafe temperatures (Maryam et al., 2022). In remote communities such as Dusun Tiga, average delays reached 45 minutes, which corresponded with a 28% reduction in toddler food intake (Octasila & Dariyani, 2021). These findings align with research by Jayadi et al. (2021) in South Sulawesi, which identified limited road access and adverse weather as critical barriers to effective PMT distribution (Ellora et al., 2025).
2. Budgetary Constraints

The 2024 budget allocation of IDR 12,000 per PMT meal was insufficient to cover fuel and operational costs associated with motorcycle-based delivery, compelling officers to use personal funds for approximately 23% of distributions (Haryani et al., 2024). Delays in disbursing honoraria, as stipulated in Ministry of Health Regulation No. 42/2022, led to the resignation of 15% of program personnel within the first three months (Febriyati et al., 2022). Budget limitations have also been cited in prior studies, such as Adiyasa et al. (2010), which identified insufficient funding and lack of incentives as major impediments to program sustainability (Ellora et al., 2025).

3. Participation Gaps

   Approximately 40% of eligible mothers did not attend *Posyandu* sessions, primarily due to work obligations in oil palm plantations. This contributed to inconsistencies in 32% of growth monitoring records (Corie & Syakurah, 2024). These participation gaps undermine the accuracy of child health data and mirror findings from Corie & Syakurah (2024), who highlighted maternal employment in the plantation sector as a key deterrent to *Posyandu* attendance.

4. Educational Limitations

   The absence of caregivers during PMT deliveries contributed to suboptimal food storage practices in 18% of households, with 12% of respondents reheating meals at unsafe temperatures. This supports the findings of Haryani et al. (2024), who emphasized the necessity of educational interventions—particularly through digital media—to enhance household knowledge on safe food handling and storage.

Solutions for the Implementation of the Supplementary Feeding Program (PMT) for Toddlers in the Sei Mencirim Community Health Center Area, Deli Serdang Regency, 2024

1. Optimized Distribution Network

   A decentralized distribution model was implemented through seven satellite centers, utilizing GPS-tracked motorcycles to reduce delivery times by 35%. This system, adapted from the Ajibarang Health Center's 2023 model, led to an increase in food temperature compliance, achieving 89%.

2. Budget Restructuring

   Through the reallocation of 15% of Village Funds (ADD), as mandated by Regent Regulation No. 12/2024, health worker honoraria increased by 40%. This financial adjustment contributed to a significant reduction in staff turnover, from previous levels to just 5%.

3. Community Participation

   The introduction of evening nutrition sessions integrated into Qur'an study groups enhanced maternal participation by 52%. Additionally, home-based growth monitoring conducted by trained community volunteers improved the completeness of growth data records to 94%.

4. Educational Innovation

   The use of tablet-based video tutorials on food storage practices led to an improvement in proper storage behaviors, rising from 68% to 87%. This initiative was further reinforced by a WhatsApp-based reminder system for timely feeding schedules.

A notable outcome of cross-sector collaboration with the Agriculture Office was the establishment of three village-based fish farms, which helped stabilize the local fish supply and reduce raw material costs by 18%. Collectively, these interventions contributed to a 22% reduction in the prevalence of wasting among toddlers within six months.

Implications

The findings of this study hold significant implications for strengthening the Supplementary Feeding Program (PMT) across health centers, Posyandu posts, and village administrations. Health centers should enhance cadre capacity through continuous training and the integration of digital monitoring systems to improve targeting accuracy and intervention effectiveness. Posyandu posts can adopt digital media-based educational innovations to elevate maternal knowledge and promote safe feeding practices. Village governments are encouraged to allocate Village Funds (ADD) to support volunteer incentives, improve distribution infrastructure, and foster multisectoral collaboration to ensure the sustainability of local food sources. A coordinated, cross-sectoral approach is essential to enhancing both the efficiency and long-term impact of PMT implementation in rural contexts.

Limitations

This study has several limitations. First, the number of informants was limited to eight individuals, and the research was conducted over a relatively short period (October 2024–February 2025), which restricts the generalizability of the findings to the broader Indonesian context. Second, although data triangulation was employed to enhance validity, the potential for information bias from respondents cannot be entirely eliminated. Therefore, the findings should be interpreted with caution and are most applicable to rural settings that face comparable challenges related to distribution logistics, community participation, and budgetary constraints.

CONCLUSION

The Supplementary Feeding Program (PMT) in Sei Mencirim encountered four primary challenges: (1) geographical barriers that caused delivery delays in 35% of cases during the monsoon season; (2) budgetary constraints that led to high cadre turnover; (3) low maternal participation, with a 40% absenteeism rate at Posyandu sessions; and (4) incomplete nutrition education due to frequent caregiver absence during home visits. To address these issues, decentralized distribution hubs reduced delivery delays by 35%, and reallocations of village funds improved cadre retention by 40%. Evening education sessions held during community gatherings increased maternal participation by 52%, while mobile-based tutorials enhanced food safety compliance to 87%. Collectively, these interventions contributed to a 22% reduction in wasting prevalence within six months. These findings underscore the need for policymakers to revise Ministry of Health Regulation No. 42/2022 to include logistical support, promote the integration of nutrition programs into village-level budgeting, and scale up the use of tablet-based educational tools nationwide. Additionally, local governments should prioritize upgrading rural transportation infrastructure and fostering cross-sectoral partnerships—such as community aquaculture programs—to ensure a stable supply of local ingredients.

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