



Empowering Posyandu Cadres Through Participatory Training for Child Growth Monitoring and Stunting Prevention in Fakfak Regency

Pemberdayaan Kader Posyandu melalui Pelatihan Partisipatif untuk Pemantauan Pertumbuhan Anak dan Pencegahan Stunting di Kabupaten Fakfak

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ABSTRACT

Stunting remains a major public health concern in Indonesia, particularly in areas with limited resources and access to health services. This community service program aimed to strengthen posyandu cadre knowledge and practical skills in child growth monitoring, health education, and stunting prevention through participatory training supported by the Ibu Hebat Anak Sehat educational book. Thirty cadres from five posyandu in the Puskesmas Fakfak catchment area participated in a two-day program involving needs assessment, interactive learning, practical simulation, supervised field application, reflection, and follow-up mentoring. Knowledge was assessed using a validated 20-item questionnaire before and after training, while practical skills were assessed using a structured 10-item observation checklist. The mean knowledge score increased from 58.3 (SD = 12.4) before training to 86.5 (SD = 8.7) after training, with a mean difference of 28.2 points ($p < 0.001$). The proportion of cadres with good knowledge increased from 13.3% to 80.0%. All 30 cadres achieved the predefined practical competency threshold of at least 18 of 20 points. Qualitative findings indicated increased confidence, perceived usefulness of the educational book, and continued need for mentoring and supervision. The program was associated with improved cadre knowledge and observed practical performance, while longer-term effects require further evaluation.

Keywords: community empowerment; health education; posyandu cadres; stunting prevention; training

Abstrak. Stunting masih menjadi salah satu masalah kesehatan masyarakat utama di Indonesia, khususnya di wilayah dengan keterbatasan sumber daya dan akses terhadap pelayanan kesehatan. Program pengabdian kepada masyarakat ini bertujuan untuk meningkatkan pengetahuan dan keterampilan praktis kader posyandu dalam pemantauan pertumbuhan anak, edukasi kesehatan, dan pencegahan stunting melalui pelatihan partisipatif yang didukung oleh buku edukasi Ibu Hebat Anak Sehat. Sebanyak 30 kader dari lima posyandu di wilayah kerja Puskesmas Fakfak mengikuti program selama dua hari yang mencakup asesmen kebutuhan, pembelajaran interaktif, simulasi praktik, penerapan lapangan dengan supervisi, refleksi, dan pendampingan tindak lanjut. Pengetahuan kader diukur menggunakan kuesioner tervalidasi yang terdiri atas 20 butir sebelum dan setelah pelatihan, sedangkan keterampilan praktis dinilai menggunakan daftar tilik observasi terstruktur yang terdiri atas 10 butir. Rerata skor pengetahuan meningkat dari 58,3 (SD = 12,4) sebelum pelatihan menjadi 86,5 (SD = 8,7) setelah pelatihan, dengan selisih rerata sebesar 28,2 poin ($p < 0,001$). Proporsi kader dengan kategori pengetahuan baik meningkat dari 13,3% menjadi 80,0%. Seluruh 30 kader mencapai ambang kompetensi praktis yang telah ditetapkan, yaitu sekurang-kurangnya 18 dari total 20 poin. Temuan kualitatif menunjukkan adanya peningkatan kepercayaan diri kader, persepsi positif terhadap kebermanfaatan buku edukasi, serta kebutuhan berkelanjutan terhadap pendampingan dan supervisi. Program ini berkaitan dengan peningkatan pengetahuan kader dan

kinerja praktis yang teramati, sedangkan dampak jangka panjangnya masih memerlukan evaluasi lebih lanjut.

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INTRODUCTION

Stunting remains a major public health concern in Indonesia because impaired linear growth during early childhood can affect cognitive development, educational attainment, and productivity later in life (Lestari et al., 2024). The 2024 Indonesian Nutrition Status Survey reported a national stunting prevalence of 19.8%, indicating that substantial challenges remain despite ongoing national efforts to accelerate stunting reduction (Ministry of Health Republic of Indonesia, 2024). The burden is particularly concerning in geographically dispersed areas where limited resources, access barriers, and differences in community capacity can constrain the delivery of preventive maternal and child health services.

Fakfak Regency illustrates this challenge, with a reported stunting prevalence of 30.5% in 2024, considerably higher than the national prevalence (Badan Pusat Statistik Kabupaten Fakfak, 2024). This situation requires community-based strategies that complement services provided through health facilities and strengthen the capacity of local actors who have regular contact with children and families. Posyandu provides an important community platform for growth monitoring, health education, early identification of growth and developmental concerns, and mobilization of families to participate in maternal and child health services.

Posyandu cadres play an important role in delivering these community-level activities because they are closely connected with families and participate directly in routine posyandu services (Hasan et al., 2022; Kementerian Kesehatan RI, 2020). Their responsibilities include child registration, anthropometric measurement, growth monitoring, communication with mothers and caregivers, health education, and mobilization of community participation (Sitorus et al., 2023). Effective performance of these responsibilities requires adequate knowledge, practical skills, appropriate educational resources, and continued technical guidance from health professionals.

The needs assessment conducted within the Puskesmas Fakfak catchment area identified several capacity-building needs among posyandu cadres. The assessment indicated limited understanding of child growth and development, growth monitoring, early recognition of potential growth problems, and health communication, while access to structured training was not evenly distributed among cadres. These conditions were particularly relevant because participating cadres had diverse educational backgrounds and levels of experience, requiring a learning approach that was practical, accessible, and applicable to routine posyandu activities. Previous community-based programs have reported improved cadre knowledge and practical capacity following structured education, simulation, and training activities (Putri, 2025; Dwihestie et al., 2024; Sitorus et al., 2023).

Capacity building also requires educational resources that cadres can continue to use after formal training. Printed materials can provide practical references during routine community activities, particularly in settings where access to digital devices or stable internet connectivity may be limited. The Ibu Hebat Anak Sehat book was developed as an accessible educational resource covering child growth and development, developmental milestones, nutrition and feeding practices, positive parenting, and practical monitoring of child development (Fretes, 2025). Integrating the book into cadre training therefore provided a means of connecting structured learning with practical application and continued self-directed reference during posyandu activities.

The identified needs indicated that a short, participatory, and practice-oriented capacity-building program was appropriate for the participating cadres. The program brought together cadres, Puskesmas personnel, the Fakfak Regency Health Department, and PKK Kabupaten Fakfak to identify local needs, prioritize training content, conduct practical learning, and support subsequent implementation at participating posyandu. This collaborative approach was intended to strengthen cadre involvement in the learning process while ensuring that the training addressed actual service conditions and could be integrated into existing community health activities.

Accordingly, this community service program aimed to strengthen the capacity of posyandu cadres in child growth and development education and stunting prevention within the Puskesmas Fakfak catchment area. The program specifically focused on improving cadre knowledge, strengthening practical skills in anthropometric measurement, growth monitoring, and health

education, and supporting continued cadre development through educational resources, mentoring, and multi-sectoral collaboration. This article describes the implementation, outputs, and observed outcomes of the community service program and discusses its practical implications for strengthening community-based stunting prevention in resource-limited settings.

LITERATURE OR CONCEPTUAL REVIEW

Community-Based Cadre Empowerment

Community empowerment involves strengthening the capacity of individuals and groups to participate in decisions and actions that influence their health and well-being (Bou-Karroum, 2026). In community-based primary health care, empowerment is particularly relevant when local health workers require knowledge, practical skills, and institutional support to perform preventive and promotive functions. Within the Indonesian posyandu system, cadre empowerment therefore extends beyond knowledge transfer and includes opportunities for cadres to participate in planning, practice, problem solving, and evaluation of activities relevant to their communities.

Role of Posyandu Cadres in Stunting Prevention

Posyandu cadres support essential community-level maternal and child health activities, including child registration, anthropometric measurement, growth monitoring, health education, and mobilization of families to use available health services (Hasan et al., 2022; Kementerian Kesehatan RI, 2020). These functions place cadres in a strategic position for identifying potential growth problems and communicating preventive information to caregivers during routine service contacts. Adequate knowledge and practical skills are therefore important prerequisites for cadres to perform these responsibilities accurately and consistently. Cadre capacity is influenced by access to training, educational resources, supervision, and opportunities for continued practice. Previous studies have reported improvements in cadre knowledge and practical capacity following structured training, simulation, and education-based interventions (Putri, 2025; Dwihestie et al., 2024; Sitorus et al., 2023). These findings support capacity building as an important component of community-based stunting prevention, while also indicating the need for training approaches that are accessible to cadres with different educational backgrounds and levels of previous experience.

Training and Educational Media for Cadre Capacity Building

Training can strengthen cadre capacity when learning activities combine relevant information with opportunities for practical application and feedback. Simulation and supervised practice are particularly useful for procedural competencies because they allow participants to translate theoretical information into observable actions before performing activities independently in routine services (Dwihestie et al., 2024; Sitorus et al., 2023). Continued mentoring can further reinforce acquired skills and provide opportunities to address difficulties encountered during implementation. Educational media can complement face-to-face training by providing cadres with a reference that remains available after formal instruction. The Ibu Hebat Anak Sehat book was developed to provide accessible information on child growth and development, developmental milestones, nutrition and feeding practices, positive parenting, and practical monitoring of child development (Fretes, 2025). A printed resource may be particularly useful when cadres work in settings where access to digital devices or stable internet connectivity is not always available. Its potential value within cadre training therefore lies in its ability to connect structured instruction with subsequent self-directed learning and community health education.

Participatory Approaches to Community Capacity Building

Participatory approaches emphasize collaboration between community members, program implementers, and relevant institutions in identifying needs, developing actions, evaluating implementation, and responding to emerging problems (Ramanadhan, 2024). Participatory Action Research extends this principle by linking participation with action, reflection, and subsequent adjustment of practice. Such an approach can strengthen local ownership because community participants contribute not only as recipients of an intervention but also as contributors to decisions concerning program implementation. In cadre empowerment programs, participation can be operationalized through needs assessment, collaborative development of training priorities, practical implementation, reflection on field experiences, and adaptation of subsequent activities. This process is particularly relevant when local geographical conditions, educational backgrounds, and service constraints influence how cadres perform their responsibilities. Collaboration with Puskesmas, local government, and community organizations can further strengthen the institutional environment required to maintain cadre capacity after the initial training period.

Sustainability of Cadre Capacity Building

Sustained cadre capacity requires more than a single training event. Regular supervision, opportunities for continued practice, accessible reference materials, and institutional support can help maintain knowledge and practical skills over time. Community health programs may also benefit from integrating trained cadres into existing health-system structures rather than creating parallel mechanisms for service delivery.

In the present program, sustainability was conceptualized through continued mentoring, provision of the educational book, development of master trainers, and collaboration with Puskesmas and PKK. These mechanisms were intended to support continued use of the acquired knowledge and skills within routine posyandu activities. The conceptual framework therefore linked four program components, namely cadre participation, structured training, practical application, and institutional support, with the expected outcomes of improved knowledge and observed practical competency.

METHODS

Program Design and Participatory Approach

This community service program used a participatory, action-oriented approach to strengthen the capacity of posyandu cadres in child growth monitoring, developmental surveillance, health education, and stunting prevention. The program combined structured training, practical simulation, supervised field application, reflection, and follow-up mentoring so that cadres could apply the knowledge and skills acquired during the activities. The participatory process followed four interconnected stages. Stage 1, participation and planning, involved cadres and program partners in identifying learning needs and operational challenges through interviews and direct observation of routine posyandu activities. The findings were subsequently discussed with cadres and Puskesmas health workers to determine priority training topics and appropriate learning methods. Stage 2, action, involved interactive training, practical simulation, role-play, and supervised application of the acquired skills during posyandu activities. Stage 3, reflection, involved interviews and focus group discussions to identify cadres' experiences, perceived changes, implementation difficulties, and additional support needs. Stage 4, adaptation and continued action, involved targeted mentoring and corrective feedback during subsequent posyandu activities based on the issues identified during reflection. The program therefore positioned cadres as active participants in identifying needs, applying skills, reflecting on experiences, and improving subsequent practice. The pre-test and post-

test assessment was used as a program evaluation component to describe changes in cadre knowledge, while practical observation and qualitative information were used to document skill performance, participant experiences, and implementation needs.

Setting and Timeline

The program was implemented within the Puskesmas Fakfak catchment area, Fakfak Regency, West Papua Province. The program comprised preparatory activities, cadre training, supervised field application, mentoring, and program evaluation. The two-day face-to-face training was conducted on August 14–15, 2026, with day one held at the PKK Secretariat Building for interactive learning, discussion, and practical preparation, followed by supervised field application at five participating posyandu on day two.

Participants and Recruitment

The program involved 30 posyandu cadres serving children under five years of age from five posyandu, namely Kampung Lusiferi, Gewerpe, Gloria, Sehati, and Kampung Wrikapal. Participants were identified purposively in collaboration with Puskesmas Fakfak and the respective posyandu coordinators. Eligible participants were active posyandu cadres who had served for at least six months, were willing to participate in the complete program, had not participated in comparable structured training during the preceding two years, and were available for the full training schedule. All 30 eligible cadres participated in the program, and no participant withdrew during the training and evaluation activities.

Program Partners and Their Roles

The program involved four principal stakeholder groups. Posyandu cadres served as the primary participants and community-level co-implementers. Puskesmas Fakfak provided technical supervision, health personnel support, and follow-up guidance, while the Fakfak Regency Health Department provided policy and program support. PKK Kabupaten Fakfak supported venue provision, cadre mobilization, community coordination, and institutional support for program continuity.

Program Implementation

Preparatory and Participatory Planning Phase

Program preparation began with coordination meetings involving cadres, Puskesmas personnel, the Fakfak Regency Health Department, and PKK representatives. The meetings addressed program objectives, participant selection, available facilities and equipment, training requirements, implementation schedules, and partner responsibilities. A needs assessment was conducted through semi-structured interviews with 15 cadres and direct observation of routine posyandu activities. The assessment explored cadre knowledge regarding child growth and development, growth monitoring, early recognition of potential growth problems, health education practices, and operational challenges encountered during routine services. The findings were discussed collaboratively with cadres and Puskesmas health workers to identify priority learning needs. The resulting training content addressed child growth and development, causes and prevention of stunting, balanced nutrition, exclusive breastfeeding, complementary feeding, growth monitoring, developmental stimulation, and communication with caregivers. The Ibu Hebat Anak Sehat book was selected as the principal educational resource, and one copy was provided to each participating cadre.

Training Phase

The two-day training combined interactive presentations, small-group discussions, practical simulation, role-play, and supervised field application. Day one addressed child growth and development, causes and consequences of stunting, balanced nutrition, exclusive breastfeeding, complementary feeding, growth monitoring, and developmental stimulation. The Ibu Hebat Anak Sehat book was integrated into the learning sessions as a reference for discussion, simulation, and health education practice. Day two involved supervised implementation at the five participating posyandu. Cadres performed registration, child weighing, length or height measurement, growth chart completion, growth interpretation, early identification procedures, and health education for mothers. The implementing team and Puskesmas health workers observed the activities and provided immediate corrective feedback to support accurate application of the procedures.

Reflection and Mentoring Phase

Following the training, cadres participated in individual interviews and focus group discussions to reflect on their learning experiences, perceived changes in confidence and practice, challenges encountered during implementation, usefulness of the educational resource, and additional support requirements. Information obtained during this reflection stage was used to identify areas requiring reinforcement during subsequent mentoring. Post-training mentoring was conducted through monthly on-site visits to the participating posyandu. During each visit, the implementing team observed cadre activities, discussed implementation challenges, provided corrective feedback, and worked with cadres and Puskesmas personnel to identify practical solutions. Cadres also maintained activity logbooks documenting children served, growth-related findings, and health education activities.

Evaluation Instruments

Knowledge Questionnaire

Cadre knowledge was assessed using a 20-item multiple-choice questionnaire covering child growth and development, causes and consequences of stunting, balanced nutrition, exclusive breastfeeding, complementary feeding, growth monitoring, and developmental stimulation. Each correct response received one point, and the total score was converted to a 0–100 scale. Content validity was assessed by three experts comprising two public health academics and one pediatric nutrition specialist. The resulting Item-Content Validity Index was 0.89. Preliminary item analysis involving 10 cadres outside the target population produced item-total correlation coefficients ranging from 0.45 to 0.78, exceeding the critical correlation value of 0.361. Internal consistency was satisfactory, with a Cronbach's alpha coefficient of 0.84. The questionnaire was administered immediately before the training and immediately after completion of the two-day training using the same scoring procedure.

Practical Skills Observation Checklist

Practical skills were assessed using a structured 10-item observation checklist. Each item was scored using a three-point scale, with 0 indicating that the task was not performed, 1 indicating that the task was performed with assistance, and 2 indicating that the task was performed independently. The checklist assessed registration, child weighing, length or height measurement, growth chart completion, growth interpretation, early identification of developmental concerns, health communication, use of the educational book, documentation, and maternal engagement. The maximum score was 20 points, and a score of at least 18 points, equivalent to 90% of the maximum score, was predefined as the criterion for practical competency. Inter-rater agreement was assessed through independent paired observations of five cadres conducted by two assessors. The resulting kappa coefficient was 0.82, indicating substantial agreement between assessors.

Qualitative Evaluation

Qualitative information was collected through semi-structured interviews and focus group discussions. Individual interviews were conducted with all 30 participating cadres to explore

experiences of the training, perceived changes in confidence and practice, usefulness of the educational resource, implementation barriers, and needs for continued support. Two focus group discussions were subsequently conducted, with eight cadres in each group. Participants were purposively selected to provide variation in age, educational background, and posyandu location. The interview and FGD guides were developed according to the program objectives and were reviewed before implementation. All interviews and FGDs were audio-recorded with participant permission and transcribed verbatim. Thematic analysis followed the six phases described by Braun and Clarke, comprising familiarization with the data, initial coding, development of candidate themes, review of themes, definition and naming of themes, and reporting (Clarke & Braun, 2014). NVivo 12 was used to organize the qualitative data. Credibility was strengthened through participant member checking and triangulation with observations from practical activities.

Data Analysis

Quantitative data were analyzed using SPSS version 26.0. Descriptive statistics included frequencies, percentages, means, and standard deviations. Pre- and post-training knowledge scores were assessed for normality using the Shapiro–Wilk test ($p = 0.182$ and $p = 0.215$, respectively) and compared using a paired-samples t-test at a two-sided $\alpha = 0.05$. Cohen's d was used to assess the magnitude of change and yielded 2.88, indicating a large standardized change. Knowledge was categorized as good ($>80\%$), adequate ($60\text{--}80\%$), or poor ($<60\%$). Practical competency was summarized using descriptive statistics and the predefined competency threshold, while qualitative data were analyzed thematically.

Program Evaluation Framework

Program evaluation followed an input–process–output–outcome framework. Input evaluation examined the availability of educational materials, training facilities, equipment, and participant readiness. Process evaluation examined implementation of training activities, cadre participation, partner involvement, practical application, reflection, and mentoring. Output evaluation examined achievement of planned program deliverables, including trained cadres, distribution of educational resources, practical skills assessment, training documentation, and dissemination outputs. Outcome evaluation focused on changes in cadre knowledge, observed practical competency, participant experiences, and identified needs for continued cadre support.

Sustainability Strategy

Program sustainability was supported through continued collaboration among cadres, Puskesmas Fakfak, the Fakfak Regency Health Department, and PKK Kabupaten Fakfak. Five cadres were designated as master trainers to support subsequent dissemination of the training content to cadres from other posyandu. Each participating cadre received the Ibu Hebat Anak Sehat book as a continuing reference for routine posyandu activities and community health education. Puskesmas Fakfak also committed to incorporating the educational resource into routine cadre activities and continuing technical mentoring after the formal training period.

RESULTS

Participant Characteristics

Thirty posyandu cadres from five participating posyandu within the Puskesmas Fakfak catchment area completed the community-based capacity-building program. The participating posyandu

comprised Kampung Lusiferi, Gewerpe, Gloria, Sehati, and Kampung Wrikapal. All 30 cadres completed the training, practical activities, and post-training evaluation, with no participant withdrawal during the program. The largest proportion of cadres was aged 31–40 years (40.0%), followed by those aged 41–50 years (30.0%). Regarding educational attainment, 50.0% of cadres had completed senior high school and 33.3% had completed junior high school. In terms of cadre experience, 36.7% had served for 1–3 years and 30.0% had served for 4–6 years. Most participants (73.3%) had not previously attended structured training related to child growth, development, or stunting prevention, indicating that the program reached cadres with limited previous exposure to formal capacity-building activities.

Table 1. Participant Characteristics (n = 30)

Characteristic	n	%
Age		
20–30 years	5	16.7
31–40 years	12	40.0
41–50 years	9	30.0
>50 years	4	13.3
Education		
Elementary school	2	6.7
Junior high school	10	33.3
Senior high school	15	50.0
Diploma/Bachelor	3	10.0
Cadre tenure		
<1 year	4	13.3
1–3 years	11	36.7
4–6 years	9	30.0
>6 years	6	20.0
Previous related training		
Yes	8	26.7
No	22	73.3

Changes in Cadre Knowledge

The training was followed by a marked improvement in cadre knowledge regarding child growth and development, nutrition, growth monitoring, and stunting prevention. The mean knowledge score increased from 58.3 (SD = 12.4) before training to 86.5 (SD = 8.7) after training, corresponding to a mean increase of 28.2 points (SD = 9.8). The paired-samples t-test demonstrated a statistically significant difference between pre-training and post-training knowledge scores, $t(29) = 15.76$, $p < 0.001$. The observed change indicates that participants demonstrated substantially higher knowledge scores following completion of the training program.

Table 2. Changes in Cadre Knowledge Scores Before and After Training

Knowledge score	Pre-training	Post-training	Mean difference	p-value	Cohen's d
Mean (SD)	58.3 (12.4)	86.5 (8.7)	28.2 (9.8)	<0.001*	2.88

Paired-samples t-test.

The distribution of knowledge categories showed a corresponding shift toward higher levels after the training. The proportion of cadres classified as having good knowledge increased from 13.3% (4/30) before training to 80.0% (24/30) after training. Conversely, the proportion classified as having poor knowledge decreased from 50.0% (15/30) to 3.3% (1/30), while the adequate category decreased from 36.7% (11/30) to 16.7% (5/30).

Table 3. Distribution of Cadre Knowledge Categories Before and After Training

Knowledge category	Pre-training, n (%)	Post-training, n (%)
Good (>80%)	4 (13.3)	24 (80.0)
Adequate (60–80%)	11 (36.7)	5 (16.7)
Poor (<60%)	15 (50.0)	1 (3.3)
Total	30 (100.0)	30 (100.0)

Practical Competency

The practical component enabled cadres to apply the knowledge acquired during the training to routine posyandu activities. Practical competency was assessed during supervised field implementation on August 15, 2026, using a 10-item observation checklist with a maximum score of 20 points. All 30 cadres achieved the predefined competency threshold of at least 18 points. The mean competency score was 19.2 (SD = 0.8), with individual scores ranging from 18 to 20. Independent performance was highest for child weighing (100.0%) and lowest for early detection of developmental delays (86.7%), indicating that interpretation-related activities remained an area requiring continued technical support.

Table 4. Cadre Performance During Practical Skills Assessment (n = 30)

Practical skill	Performed independently, n (%)
Registration procedures	29 (96.7)
Accurate child weighing	30 (100.0)
Correct length/height measurement	29 (96.7)
Growth chart completion	28 (93.3)
Growth interpretation	27 (90.0)
Early detection of developmental delays	26 (86.7)
Health communication	28 (93.3)
Use of educational book during counseling	29 (96.7)
Documentation accuracy	28 (93.3)
Maternal engagement	27 (90.0)

Training and Field Implementation

The first training day was conducted on August 14, 2026, at the PKK Secretariat Building and involved all 30 participating cadres. The sessions addressed child growth and development, causes and consequences of stunting, balanced nutrition, exclusive breastfeeding, complementary feeding, growth monitoring, developmental stimulation, and the use of the Ibu Hebat Anak Sehat book for community health education. The training used interactive presentations, group discussions, practical demonstrations, and role-play activities. Cadres actively participated in discussions and practiced the procedures required for routine growth monitoring and health education.

The second training day was conducted on August 15, 2026, at the five participating posyandu. Cadres applied the training content through registration, child weighing, length or height measurement, growth chart completion, growth interpretation, early identification procedures, and health education for mothers under supervision from the implementing team and Puskesmas health workers. The Ibu Hebat Anak Sehat book was used during counseling activities as a practical reference for explaining child growth, development, nutrition, and preventive practices.

Figure 1 presents selected documentation of the community-based training program, including (A) interactive classroom-based training, (B) practical simulation of anthropometric measurement, (C) supervised growth-monitoring activities at participating posyandu, and (D) cadre-led health education using the Ibu Hebat Anak Sehat book.



Figure 1. Implementation of participatory cadre training and supervised field application.

Qualitative Findings

Qualitative information was obtained from individual interviews with all 30 cadres and two focus group discussions involving 16 cadres. Thematic analysis identified three interconnected themes that described participants' experiences with the training, namely increased confidence in cadre practice, perceived usefulness of the educational book, and the continuing need for mentoring and technical supervision.

Theme 1. Increased Confidence in Cadre Practice

- a. Cadres described greater confidence in interpreting growth measurements and communicating findings to mothers after completing the training. Participants particularly valued practical activities because the activities provided opportunities to practice procedures and receive immediate feedback.
 “Before the training, I only knew how to weigh children, but I did not understand what the numbers meant. Now I can explain to mothers whether their child’s growth is normal or needs attention.”(Cadre 7, 38 years)
- b. A participant in the first focus group discussion similarly emphasized the contribution of practical activities to confidence in performing growth-monitoring procedures.
 “I feel more confident now because I understand what to look for when measuring children’s growth. The practical sessions helped me practice until I got it right.” (FGD 1, Cadre 12, 45 years)

Theme 2. Perceived Usefulness of the Educational Book

- a. Participants described the Ibu Hebat Anak Sehat book as a practical reference during training and routine posyandu activities. Cadres particularly valued its simple language, illustrations, and structured information because these features supported explanations provided to mothers.

“The book is very helpful. The language is simple, and the pictures make it easier to understand. I can show it to mothers when I explain things.” (Cadre 3, 32 years)

- b. Another participant reported using the book during preparation for routine posyandu activities and community health education.

“I keep the book with me during posyandu sessions. It helps me remember important points when I am explaining things to mothers.” (FGD 2, Cadre 19, 41 years)

Theme 3. Continued Need for Mentoring and Supervision

- a. Participants identified continued mentoring as an important requirement for maintaining and applying the skills acquired during the training. Cadres reported that technical support remained particularly important when they encountered situations requiring further interpretation or guidance.

“The training was very good, but I worry that without follow-up, I might forget some of the things we learned. Regular visits from the health workers would help us stay on track.” (Cadre 22, 50 years)

- b. A similar concern emerged during the first focus group discussion, where participants emphasized the importance of access to technical assistance during routine posyandu activities.

“We need ongoing mentoring. Sometimes we encounter cases that we are not sure how to handle. Having someone to ask would make a big difference.” (FGD 1, Cadre 9, 36 years)

Implementation Challenges and Responses

The implementation team identified four main operational challenges during program delivery. These challenges involved the limited training duration, variation in participants' educational backgrounds, limited equipment at some posyandu locations, and geographical distance between participating sites. The team addressed these challenges through prioritization of essential training content, use of accessible language and practical demonstrations, coordination of equipment support with Puskesmas personnel, and division of mentoring responsibilities among implementation team members. These adaptations allowed the planned activities to proceed across the five participating posyandu.

Table 5. Implementation Challenges and Responses

Challenge	Response
Limited training duration	Essential content was prioritized, and the educational book was provided for continued self-directed learning
Variation in educational backgrounds	Accessible language, discussion, simulation, role-play, and illustrated materials were used
Limited equipment at some posyandu	Equipment support was coordinated with Puskesmas personnel, and procurement needs were documented
Geographical distance between posyandu	Mentoring responsibilities were divided among implementation team members to facilitate site-specific supervision

Sustainability Activities

The program established four mechanisms to support continuation of cadre capacity building after the formal training period. First, the implementing team, Puskesmas Fakfak, and PKK Kabupaten Fakfak established commitments for continued mentoring and monitoring. Second, five cadres were designated as master trainers to support dissemination of the training content to cadres from other posyandu. Third, all participating cadres received the Ibu Hebat Anak Sehat book for continued use during routine posyandu activities and community health education. Fourth, Puskesmas Fakfak incorporated the educational book as a supporting resource within routine posyandu activities, thereby

providing a mechanism for continued use of the training material within existing community health services.

DISCUSSION

This community-based program showed that a participatory, practice-oriented approach was feasible for strengthening posyandu cadre capacity within the Puskesmas Fakfak service area. The findings suggest that combining needs-based instruction, practical simulation, supervised application, educational resources, and follow-up support can provide a structured learning pathway for cadres working in geographically dispersed communities. The observed changes should nevertheless be interpreted as program-associated improvements rather than evidence of causal effectiveness because the evaluation did not include a comparison group.

The findings are consistent with previous community-based capacity-building programs involving posyandu cadres. Putri (2025) reported improvements following integrated cadre training, while Dwihestie et al. (2024) described benefits from structured training addressing early stunting detection and health communication. These findings support the use of experiential and practice-oriented learning for cadre development, particularly when training connects theoretical information with procedures that cadres perform during routine services. The present program further integrated these elements with supervised application at participating posyandu and continued access to a printed educational resource.

Several mechanisms may explain the observed improvement in knowledge. The training used interactive presentations, discussion, simulation, role-play, and direct practice, allowing cadres to receive information, apply procedures, and obtain immediate feedback within the same learning process. The preliminary needs assessment also enabled the training team to prioritize content that reflected actual service requirements rather than relying solely on standardized instructional materials. This alignment between identified needs and learning activities may have increased the relevance and applicability of the training for cadres with different educational backgrounds and previous experience.

The educational approach was particularly relevant because many participating cadres had limited previous exposure to structured training on child growth, development, and stunting prevention. The use of accessible explanations, visual materials, demonstrations, and repeated practice may have reduced barriers associated with differences in educational background and facilitated translation of technical information into routine cadre activities. These findings support the importance of adapting community health training to participants' learning needs rather than relying predominantly on lecture-based instruction.

The Ibu Hebat Anak Sehat book provided an additional reference that connected formal training with subsequent community activities. Participants perceived the book as useful because its language, illustrations, and structured information facilitated learning and communication with mothers. However, the contribution of the book cannot be isolated from the effects of training, simulation, supervision, and mentoring because the program evaluated these components as an integrated package. Therefore, the findings support the book as a complementary educational resource rather than as evidence of its independent effectiveness.

The practical findings indicate that cadres were able to perform most observed procedures independently during supervised field application. Performance was relatively stronger for measurement-based activities than for interpretation and developmental assessment, suggesting that procedural tasks with clearly defined steps may be easier to master within a short training period. Interpretation-based activities require greater clinical reasoning and repeated exposure to varied situations, which may explain the greater need for continued technical guidance. Subsequent mentoring should therefore prioritize growth interpretation, developmental surveillance, and appropriate communication of findings to caregivers.

The qualitative findings provide additional insight into how cadres experienced the learning process. Participants described greater confidence after receiving opportunities to practice procedures and obtain immediate feedback, particularly when interpreting growth measurements and communicating findings to mothers. These perceptions suggest that experiential learning may support confidence by allowing cadres to move progressively from information acquisition to supervised application. However, reported confidence represents a subjective participant experience and should not be interpreted as evidence of sustained independent competence.

The continued need for mentoring also has important implications for community-based capacity building. Cadres reported concerns about retaining knowledge and managing situations that require further interpretation or technical guidance after formal training. Regular supervision can address this need by providing opportunities for corrective feedback, reinforcing procedures, and discussing problems encountered during routine services. Integrating mentoring within existing Puskesmas activities may therefore provide a more sustainable approach than relying on isolated training events.

The participatory process also facilitated collaboration among cadres, Puskesmas personnel, the Health Department, and PKK Kabupaten Fakfak. Such collaboration can strengthen program implementation because community participants contribute local knowledge while institutional partners provide technical, logistical, and organizational support. The approach may also facilitate integration of cadre development into existing community health structures, which is important when resources and geographical access constrain the delivery of repeated external training.

The sustainability arrangements provide a potential pathway for extending the program beyond the initial participants. The designation of master trainers can support peer dissemination, while continued access to the educational book can facilitate self-directed reference during routine activities. Institutional commitments from Puskesmas Fakfak and PKK Kabupaten Fakfak may further support continued mentoring and integration of the educational resource. These arrangements should be considered mechanisms for potential sustainability rather than evidence of demonstrated long-term program effects because their continuation and impact require prospective monitoring.

The implementation experience also highlights the importance of operational adaptation in geographically dispersed settings. Differences in educational background, limited training time, equipment constraints, and distance between posyandu required the implementation team to prioritize essential content, adapt instructional methods, coordinate available equipment, and distribute mentoring responsibilities. These adaptations enabled implementation across multiple sites while maintaining the core components of the program. Future programs may benefit from incorporating site-specific logistical planning and standardized mentoring procedures from the outset.

Several limitations should be considered when interpreting these findings. The one-group pre-test–post-test design cannot distinguish program effects from other factors that may have influenced knowledge during the evaluation period, and the immediate post-training assessment does not establish long-term knowledge retention. The supervised practical assessment may also overestimate performance compared with independent practice during routine posyandu services. Furthermore, the small sample of 30 cadres from five posyandu within one Puskesmas catchment area limits transferability, while the absence of child-level outcomes prevents conclusions regarding changes in nutritional status, developmental outcomes, or stunting prevalence.

Overall, the findings support a practical approach that links participatory needs assessment with structured learning, hands-on practice, supervised application, accessible educational materials, and continued institutional support. The approach may help address immediate cadre capacity needs while strengthening mechanisms for continued learning within routine community health services. Future evaluations should use longer follow-up periods and, where feasible, comparison groups to assess knowledge retention, independent practical performance, continued use of educational materials, dissemination through master trainers, and potential effects on child-level outcomes.

CONCLUSION

This community-based program strengthened the capacity of 30 posyandu cadres from five posyandu within the Puskesmas Fakfak catchment area through participatory training on child growth and development education and stunting prevention. The program was accompanied by an increase in mean knowledge scores from 58.3 before training to 86.5 after training, while the proportion of cadres achieving good knowledge increased from 13.3% to 80.0%. All participating cadres achieved the predefined competency threshold during supervised practical activities, particularly in anthropometric measurement, growth monitoring, and health education.

The program demonstrated the practical value of combining participatory preparation, interactive learning, hands-on practice, accessible educational materials, and collaboration with Puskesmas and PKK. The Ibu Hebat Anak Sehat book supported learning and provided cadres with a practical reference for continued use during posyandu activities, while mentoring and master-trainer mechanisms provided a foundation for program continuation. Continued supervision and periodic evaluation remain important to maintain cadre capacity and to determine whether the approach can be sustained and extended to other posyandu within Fakfak Regency.

Conflict of Interests

The authors declare that there are no conflicts of interest regarding the publication of this article.

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