**Jurnal Ilmiah STIKES Yarsi Mataram**
http://journal.stikesyarsimataram.ac.id/index.php/jik
p-ISSN: 1978-89-40 | e-ISSN: 2807-940X
Vol. XVI, No. 2, Juli 2026, pp. 155-170

# The Effectiveness of Posyandu Cadre Empowerment on Improving Knowledge, Attitudes, and Compliance of Mothers of Under-Five Children in Routine Growth Monitoring

**Tri Afrinia[1], Suharmanto[2*], Susianti[3], Dyah Wulan Sumekar Rengganis Wardani[4], Betta Kurniawan[5]**
[1,2,3,4,5]Fakultas Kedokteran Universitas Lampung, Bandar Lampung, Indonesia
triafrinia@gmail.com, suharmanto@fk.unila.ac.id, susianti.1978@fk.unila.ac.id, dyah.wulan@fk.unila.ac.id, betta.kurniawan@fk.unila.ac.id

**Article History:**
Received : 12-06-2026
Revised : 07-07-2026
Accepted : 28-07-2026
Online : 30-07-2026

**Keywords:**
Attitude;
Compliance;
Knowledge;
Posyandu cadres;

**ABSTRACT**

Routine child weighing at Posyandu is essential for monitoring growth and early detection of nutritional problems; however, maternal participation remains suboptimal due to inadequate knowledge, negative attitudes, and poor compliance. Although Posyandu cadres play a central role in community-based child health services, evidence regarding the effectiveness of cadre empowerment in improving maternal compliance remains limited. This study aimed to analyze the effectiveness of Posyandu cadre empowerment in improving mothers' knowledge, attitudes, and compliance with routine child weighing in the Pringsewu Community Health Center working area, Indonesia, in 2026. A quasi-experimental pretest–posttest control group design was conducted among 82 mothers of children under five selected using proportional stratified random sampling. Data were collected using a validated and reliable questionnaire and analyzed using paired *t*-tests and the McNemar test. The intervention significantly increased knowledge (mean difference = 5.67; 95% CI: 5.14–6.21; Cohen's $d = 2.33$; $p < 0.001$), attitudes (mean difference = 11.33; 95% CI: 10.93–11.73; Cohen's $d = 6.16$; $p < 0.001$), and compliance ($p < 0.001$; matched OR = 34.00; 95% CI: 4.65–248.38), whereas no significant changes were observed in the control group. These findings indicate that Posyandu cadre empowerment is an effective promotive and preventive strategy for strengthening maternal participation in routine child health monitoring.

**ABSTRAK**

Penimbangan rutin balita di Posyandu merupakan upaya penting dalam pemantauan pertumbuhan dan deteksi dini masalah gizi, namun cakupan kehadiran balita masih belum optimal karena rendahnya pengetahuan, sikap, dan kepatuhan ibu. Meskipun kader Posyandu berperan sebagai ujung tombak pelayanan kesehatan masyarakat, bukti mengenai efektivitas pemberdayaan kader dalam meningkatkan kepatuhan ibu terhadap penimbangan rutin masih terbatas. Penelitian ini bertujuan menganalisis efektivitas pemberdayaan kader Posyandu terhadap peningkatan pengetahuan, sikap, dan kepatuhan ibu balita di wilayah kerja Puskesmas Pringsewu Tahun 2026. Penelitian menggunakan desain quasi experiment dengan pretest-posttest control group design pada 82 ibu balita yang dipilih menggunakan proportional stratified random sampling. Data dikumpulkan menggunakan kuesioner yang telah diuji validitas dan reliabilitas, kemudian dianalisis menggunakan uji *paired t-test* dan uji McNemar. Hasil penelitian menunjukkan peningkatan yang bermakna pada pengetahuan (selisih rerata = 5,67; 95% CI: 5,14–6,21; Cohen's $d = 2,33$; $p < 0,001$), sikap (selisih rerata = 11,33; 95% CI: 10,93–11,73; Cohen's $d = 6,16$; $p < 0,001$), dan kepatuhan ($p < 0,001$; matched OR = 34,00; 95% CI: 4,65–248,38). Sebaliknya, tidak terdapat perubahan yang bermakna pada kelompok kontrol. Pemberdayaan kader Posyandu terbukti

efektif sebagai strategi promotif dan preventif untuk meningkatkan partisipasi ibu dalam penimbangan rutin balita serta mendukung penguatan pelayanan kesehatan ibu dan anak



## A. BACKGROUND

Optimal child growth and development are important indicators of a nation's development success. Child growth is characterized by an increase in physical body size due to the increase in the number and size of cells, which can be measured using anthropometric indicators such as body weight, height, and head circumference. Proper growth and development support the formation of a healthy and high-quality future generation. According to UNICEF, many children in developing countries still experience growth disorders due to nutritional problems. Globally, millions of children under five suffer from stunting, wasting, and overweight. Indonesia, as one of the countries with the largest child populations, also faces challenges in fulfilling children's nutritional and developmental needs. Factors affecting child growth and development include nutritional status, environmental sanitation, immunization history, breastfeeding practices, family income, maternal education, and maternal nutritional status during pregnancy (UNICEF, 2025).

Nutritional problems among children under five in Indonesia remain relatively high, including both undernutrition and overnutrition, which may affect children's physical, mental, and social development into adulthood. The concept of the First 1000 Days of Life emphasizes the importance of early detection and intervention to prevent growth disorders and future health problems. Therefore, improving nutrition during early childhood is considered a long-term investment in public health and welfare. Based on the Indonesian Nutritional Status Study (SSGI), the prevalence of stunting in Indonesia has shown a decline; however, child growth and developmental disorders remain important public health challenges. The risk of developmental delays, particularly in motor and speech development, remains relatively high, requiring early detection through Stimulation, Detection, and Early Intervention for Growth and Development (SDIDTK) services for children under five years of age (Indonesian Ministry Of Health Development Policy Board, 2023).

Nationally, the coverage of child growth and development monitoring has continued to increase, although it has not yet reached the established targets. Nutritional problems among children under five remain a major challenge because they can have long-term impacts on children's health, intelligence, and productivity in the future. Therefore, continuous growth monitoring is an important strategy for the prevention and early detection of nutritional problems. Prevention of growth and developmental disorders can be carried out through developmental screening using the Pre-Screening Development Questionnaire (KPSP) and growth monitoring using the Growth Monitoring Card (KMS). Growth monitoring for children under five should be conducted routinely and continuously through Posyandu activities so that growth deviations can be detected early and receive appropriate interventions (Laia, Nasution and Asriwati, 2023).

The Ministry of Health of the Republic of Indonesia continues to strengthen primary healthcare transformation through reinforcing the role of Posyandu as the closest healthcare service to the community. Posyandu is no longer focused solely on specific programs but has become integrated to serve all stages of the life cycle, including pregnant women, infants, toddlers, adolescents, adults, and older adults. Posyandu also plays an important role in health promotion, disease prevention, and community health monitoring. In efforts to improve healthcare services for children under five, growth and development monitoring has become

one of the essential services for early detection of nutritional problems and developmental disorders such as stunting, wasting, malnutrition, and obesity, allowing appropriate interventions to be implemented. The success of this program is measured through the coverage of children under five receiving routine growth and development monitoring (Kartika, Nuraini and Asriwati, 2024).

To support primary healthcare transformation, the Ministry of Health established 25 basic Posyandu cadre skills as competency standards for cadres. Cadres play a role in monitoring the growth and development of children under five using the Maternal and Child Health (MCH) handbook while improving life-cycle-based healthcare services within the community. Posyandu is a community-based health effort that plays an important role in child growth monitoring, nutrition education, and community empowerment. However, mothers' compliance in participating in routine weighing activities remains suboptimal, which may lead to delays in detecting nutritional problems and increase the risk of stunting (Suryaningsih, Fauzia and Sudiyasih, 2023).

The success of Posyandu services is strongly influenced by the role and competence of cadres as the frontline of community healthcare services. A previous study showed that cadre training and capacity strengthening improved cadres' knowledge and communication skills, thereby supporting improved quality of Posyandu services and increasing mothers' compliance with Posyandu visits. In addition, mothers' attendance at Posyandu is influenced by various factors such as maternal knowledge, motivation, occupation, support from cadres and community leaders, infrastructure, and distance to Posyandu facilities (Sutrio *et al.*, 2025).

Several studies have shown that mothers' participation and compliance in Posyandu activities are influenced by knowledge, motivation, perceptions of service quality, and the role of Posyandu cadres. Posyandu cadres are responsible for weighing, recording, counseling, and mobilizing the community, meaning that active and competent cadres can increase mothers' participation in Posyandu visits. Posyandu cadres are the key element in implementing Posyandu activities within the community (Sita, Nurfadhila and Sumiyati, 2024). The success of Posyandu services is highly dependent on the capacity and active role of cadres in providing basic healthcare services and monitoring child growth. However, limitations in cadres' knowledge, technical skills, and communication with the community are still commonly found. Cadre empowerment through training and mentoring has been proven to improve cadres' abilities in preventing nutritional problems and stunting (Syabrullah *et al.*, 2025).

However, previous evidence remains fragmented. Most studies have focused primarily on evaluating improvements in cadres' competencies or programme implementation, whereas relatively few have examined whether cadre empowerment translates into measurable behavioral changes among mothers. In addition, existing studies have generally assessed a single outcome, such as maternal knowledge, Posyandu attendance, or cadre performance, rather than simultaneously evaluating knowledge, attitudes, and compliance as interrelated behavioral outcomes. Consequently, the extent to which cadre empowerment influences these three dimensions of maternal behavior remains insufficiently understood.

This inconsistency represents an important research gap. Although cadre empowerment has been widely acknowledged as an effective community-based intervention, empirical evidence regarding its comprehensive impact on maternal knowledge, attitudes, and compliance using a controlled quasi-experimental design is still limited, particularly in Indonesian primary healthcare settings. Furthermore, few studies have simultaneously assessed these behavioral outcomes to determine whether improvements in knowledge are accompanied by positive changes in attitudes and compliance with routine child growth monitoring.

To address this gap, the present study evaluates the effectiveness of a structured Posyandu cadre empowerment intervention using a quasi-experimental pretest–posttest control group

design. The novelty of this study lies in simultaneously assessing three key behavioral outcomes—maternal knowledge, attitudes, and compliance with routine child weighing—following a cadre empowerment intervention. By doing so, this study provides more comprehensive evidence regarding the behavioral effectiveness of community-based cadre empowerment and its contribution to improving child growth monitoring services.

Based on the 2023 Indonesian Health Profile, the percentage of children under five with severely underweight status was 1.4%, while underweight children accounted for 6.9%. In Lampung Province, the percentage of underweight children under two years old was 0.7%, and underweight children under five accounted for 4%. These data indicate that child nutritional problems remain a public health challenge. The 2024 Indonesian Nutritional Status Study (SSGI) showed that the proportion of children under five weighed fewer than eight times in the previous 12 months in Lampung Province reached 43.9%. In addition, the proportion of children receiving growth monitoring that did not meet standards was 44.3%. These conditions indicate that child growth monitoring remains suboptimal (Utami *et al.*, 2025).

The indicator used to assess community participation and Posyandu performance in child weighing coverage is D/S, namely the comparison between the number of children attending and being weighed and the total number of target children under five in the area. This coverage is an important indicator in assessing the success of Posyandu services. Data from the Pringsewu District Health Office showed that the achievement of child weighing coverage based on D/S visits in 2024 at the district level was 77.7%, while at Pringsewu Community Health Center it was only 54.12%. This figure declined compared to 2023, when the district-level achievement was 75.1% and the Pringsewu Community Health Center achievement was 56.89%, and both remained below the national target of 85% (Pringsewu District Health Office, 2024; Pringsewu District Health Office, 2025). These conditions indicate that mothers' participation in the working area of Pringsewu Community Health Center remains suboptimal, requiring strengthened empowerment of Posyandu cadres as the frontline of community healthcare services.

Community empowerment has been recognized as an effective strategy for improving maternal and child health by strengthening the capacity of community health volunteers to deliver health education, encourage community participation, and facilitate access to primary healthcare services. In the context of Posyandu, empowering community health cadres through structured training and continuous support is expected to enhance their competencies in providing health promotion and motivating mothers to participate in routine child growth monitoring. The World Health Organization (2022) recommends strengthening community health worker programmes through adequate training, supportive supervision, and health system integration, as these approaches have been shown to improve the quality and utilization of maternal and child health services (WHO, 2022). Consistent with these recommendations, (Perry, Zulliger and Rogers, 2021) reported that well-trained community health workers contribute to improved health knowledge, greater utilization of preventive health services, and increased adherence to recommended health practices across various settings. Furthermore, the behavioral changes expected in this study are supported by the Health Belief Model, which explains that improved knowledge can positively influence health beliefs and attitudes, thereby encouraging mothers to comply with routine child growth monitoring practices (Glanz, Rimer and Viswanath, 2024). Therefore, this study is conceptually based on a community empowerment approach, with the Health Belief Model providing a theoretical explanation for the behavioral changes observed following the cadre empowerment intervention.

Although previous studies have demonstrated that cadre training improves cadre competency and service quality, evidence evaluating whether cadre empowerment directly changes mothers' knowledge, attitudes, and compliance simultaneously using a controlled intervention design remains limited, particularly in Indonesian primary healthcare settings.

This study is among the few quasi-experimental studies evaluating the effectiveness of structured Posyandu cadre empowerment on three maternal behavioral outcomes—knowledge, attitudes, and compliance—simultaneously within the context of routine child growth monitoring.

This study was primarily grounded in Community Empowerment Theory, which emphasizes strengthening community capacity through active participation, capacity building, and the empowerment of local community members to improve health outcomes. Within the context of Posyandu services, cadre empowerment involves enhancing the knowledge, skills, and competencies of community health volunteers through structured training, mentoring, and continuous support. Empowered cadres are expected to function as effective agents of health promotion by providing health education, motivating mothers, and facilitating community participation in routine child growth monitoring. Through this empowerment process, improvements in cadre performance are expected to promote positive changes in maternal knowledge, attitudes, and compliance with routine weighing of children under five, thereby contributing to better child growth monitoring and early detection of nutritional problems.

Therefore, this study aimed to analyze the effectiveness of Posyandu cadre empowerment in improving knowledge, attitudes, and compliance of mothers of children under five regarding routine weighing in the working area of Pringsewu Community Health Center, Pringsewu District, in 2026.

## B. METHODS

This study employed a quasi-experimental design using a Pretest–Posttest Control Group Design. The study was conducted from March to May 2026 in the working area of the Pringsewu Community Health Center, Pringsewu District, Indonesia. The intervention consisted of a structured Posyandu cadre empowerment program designed to strengthen cadres' knowledge, communication skills, and competencies in promoting routine child growth monitoring. Before implementation, cadres participated in a one-day training session consisting of lectures, group discussions, demonstrations, and role-playing on child growth monitoring, nutrition counseling, communication techniques, and maternal education. The training was supported by educational modules, flipcharts, leaflets, and growth monitoring manuals. Following the training, cadres received two mentoring sessions conducted by the research team during routine Posyandu activities to ensure consistent implementation of health education and counseling. The pretest was administered to both intervention and control groups before the cadre empowerment program was implemented. Following completion of the intervention, mothers in the intervention group received education and counseling from the empowered cadres during routine Posyandu activities over a period of eight weeks. The posttest was conducted once, four weeks after completion of the intervention to evaluate changes in maternal knowledge, attitudes, and compliance regarding routine child weighing. The control group continued receiving standard Posyandu services without the additional cadre empowerment intervention during the study period.

The study population consisted of 1,936 mothers of children aged 0–59 months registered at Posyandu within the working area of the Pringsewu Community Health Center. The sample size was calculated using the Lemeshow formula for comparison of two independent groups, with a 95% confidence level, 80% statistical power, and an anticipated effect size based on previous studies, resulting in a minimum sample size of 82 participants. Participants were selected using proportional stratified random sampling to ensure that each Posyandu area was proportionally represented. The final sample consisted of 41 mothers in the intervention group and 41 mothers in the control group (1:1 allocation ratio). The intervention and control groups were selected from different Posyandu areas to minimize contamination between groups.

Baseline demographic characteristics, including maternal age, educational level, occupation, and child's age, were compared before the intervention to ensure group comparability.

Data were collected using a structured questionnaire consisting of three domains: knowledge, attitudes, and compliance regarding routine child growth monitoring. The questionnaire was developed based on national Posyandu guidelines and relevant literature. Content validity was evaluated by three public health experts, while construct validity was assessed using Pearson Product Moment correlation. The reliability of the instrument demonstrated satisfactory internal consistency with a Cronbach's alpha coefficient greater than 0.70. Knowledge scores were calculated by summing the number of correct responses and categorized as poor, moderate, and good. Attitude items were measured using a five-point Likert scale, with higher scores indicating more positive attitudes. Compliance was assessed based on mothers' attendance at routine child weighing according to the recommended schedule and categorized as compliant or non-compliant. Data normality was assessed using the Shapiro–Wilk test. The Paired t-test was used to compare pretest and posttest scores for variables with a normal distribution, whereas the Wilcoxon Signed Rank Test was applied to variables that were not normally distributed. Statistical significance was established at $p < 0.05$. This study received ethical approval from the Health Research Ethics Committee of Medical Faculty of Universitas Lampung under approval number No. 1652/UN26.18/PP.05.02.00/2026. Written informed consent was obtained from all participants prior to data collection, and confidentiality of participant information was maintained throughout the study (Dahlan, 2020).

## C. RESULTS AND DISCUSSION

### 1. Results

The research results are presented in the table below, explaining the characteristics of the respondents and the pre- and post-measurements for the knowledge, attitude and compliance variables.

**Table 1.** Characteristics of the Respondents

| Characteristics of the Respondents | Control Group | | Intervention Group | |
|---|---|---|---|---|
| | N | % | n | % |
| Maternal Education | | | | |
| No schooling | 0 | 0.0 | 16 | 19.5 |
| Elementary School | 21 | 25.6 | 17 | 20.7 |
| Junior High School | 16 | 19.5 | 21 | 25.6 |
| Senior High School | 45 | 54.9 | 28 | 34.2 |
| Child's Sex | | | | |
| Male | 34 | 41.5 | 33 | 40.2 |
| Female | 48 | 58.5 | 49 | 59.8 |
| Total | 82 | 100.0 | 82 | 100.0 |

Based on respondent characteristics, the majority of mothers in the intervention group had a senior high school education, totaling 28 respondents (34.1%), while the control group was also dominated by mothers with a senior high school education, totaling 45 respondents (54.9%). Based on the child's sex, both groups were predominantly female children, namely 49 children (59.8%) in the intervention group and 48 children (58.5%) in the control group.

Both the intervention and control groups were predominantly composed of mothers with a senior high school education, suggesting that the participants had relatively comparable educational backgrounds. This similarity indicates that differences in educational attainment

were unlikely to substantially influence the intervention outcomes, making the observed improvements in knowledge, attitudes, and compliance more likely attributable to the Posyandu cadre empowerment programme. Likewise, the similar distribution of children's sex between the two groups supports the comparability of baseline characteristics and strengthens the internal validity of the study.

**Table 2.** Measurement in Knowledge and Attitude

| Measurement | Intervention Group Mean ± SD | Mean Difference (95% CI) | Cohen's d | p-value | Control Group Mean ± SD | Mean Difference (95% CI) | Cohen's d | p-value |
|---|---|---|---|---|---|---|---|---|
| Knowledge | 11.76±2.16 (pre) 17.43±1.33 (post | 5.67 (5.14–6.21) | 2.33 | <0.001 | 11.35±1.36 (pre) 11.39±1.36 (post) | 0.04 (−0.09–0.02) | 0.15 | 0.181 |
| Attitude | 52.39±3.99 (pre) 63.72±3.68 (post) | 11.33 (10.93–11.73) | 6.16 | <0.001 | 45.93±2.18 (pre) 45.99±2.23 (post) | 0.06 (−0.15–0.03) | 0.15 | 0.167 |

Table shows that the intervention group experienced a significant improvement in both knowledge and attitude following the Posyandu cadre empowerment programme. The mean knowledge score increased from 11.76 ± 2.16 before the intervention to 17.43 ± 1.33 after the intervention, with a mean difference of 5.67 (95% CI: 5.14–6.21; $p < 0.001$). The effect size was very large (Cohen's $d = 2.33$), indicating that the intervention had a substantial impact on improving mothers' knowledge. In contrast, the control group showed only a minimal increase in knowledge from 11.35 ± 1.36 to 11.39 ± 1.36, with a mean difference of 0.04 (95% CI: −0.09 to 0.02; $p = 0.181$) and a small effect size (Cohen's $d = 0.15$).

Similarly, mothers' attitudes improved significantly in the intervention group, with the mean score increasing from 52.39 ± 3.99 before the intervention to 63.72 ± 3.68 after the intervention. The mean difference was 11.33 (95% CI: 10.93–11.73; $p < 0.001$), accompanied by an extremely large effect size (Cohen's $d = 6.16$), demonstrating a strong influence of the intervention on maternal attitudes toward routine child weighing. Conversely, the control group showed virtually no change in attitude, with scores increasing only from 45.93 ± 2.18 to 45.99 ± 2.23, yielding a mean difference of 0.06 (95% CI: −0.15 to 0.03; $p = 0.167$) and a small effect size (Cohen's $d = 0.15$).

Overall, these findings indicate that the Posyandu cadre empowerment programme produced statistically significant and clinically meaningful improvements in maternal knowledge and attitudes, whereas no meaningful changes were observed in the control group. The large effect sizes further suggest that the intervention had a substantial impact beyond statistical significance.

**Table 3.** Measurement in Compliance

| Measurement | Intervention Group | | | Control Group | | |
|---|---|---|---|---|---|---|
| Intervention Group | Post-Compliance | | p-value | Post-Compliance | | p-value |
| Pre-Compliance | Non-compliant n (%) | Compliant n (%) | | Non-compliant n (%) | Compliant n (%) | |
| Non-compliant | 7 (17.1) | 34 (82.9) | 0.000 | 39 (95.1) | 2 (4.9) | 0.500 |
| Compliant | 1 (2.4) | 40 (97.6) | | 0 (0.0) | 41 (100.0) | |
| Total | 8 (9.8) | 74 (90.2) | | 39 (47.6) | 43 (52.4) | |

In the intervention group, there was an increase in mothers' compliance after Posyandu cadre empowerment, where most mothers who were previously non-compliant became compliant, totaling 34 respondents (82.9%) with a p-value = 0.000 (p < 0.05). In contrast, in the control group, most mothers remained non-compliant, totaling 39 respondents (95.1%), and no significant change was found (p > 0.05). These findings indicate that Posyandu cadre empowerment was effective in improving mothers' compliance with routine child weighing.

**Table 4.** Comparison of Posttest Scores Between Intervention and Control Groups

| Variable | Intervention | Control | Mean Difference | p-value |
|---|---|---|---|---|
| Knowledge (posttest) | 17.43 ± 1.33 | 11.39 ± 1.36 | 6.04 | <0.001 |
| Attitude (posttest) | 63.72 ± 3.68 | 45.99 ± 2.23 | 17.73 | <0.001 |

As shown in Table 4, significant differences were observed between the intervention and control groups at the posttest assessment. The intervention group achieved significantly higher knowledge scores (17.43 ± 1.33) than the control group (11.39 ± 1.36), with a mean difference of 6.04 points ($p < 0.001$). Likewise, posttest attitude scores were significantly higher in the intervention group (63.72 ± 3.68) than in the control group (45.99 ± 2.23), with a mean difference of 17.73 points ($p < 0.001$). These results demonstrate that the Posyandu cadre empowerment intervention was effective in improving mothers' knowledge and attitudes regarding routine child growth monitoring.

**Table 5.** Comparison of Compliance Before and After the Intervention in the Intervention and Control Groups

| Group | Pre-intervention Compliance | Post-intervention Non-compliant n (%) | Post-intervention Compliant n (%) | p-value* |
|---|---|---|---|---|
| Intervention | Non-compliant | 7 (17.1) | 34 (82.9) | <0.001 |
| | Compliant | 1 (2.4) | 40 (97.6) | |
| Control | Non-compliant | 39 (95.1) | 2 (4.9) | 0.500 |
| | Compliant | 0 (0.0) | 41 (100.0) | |

In contrast, no statistically significant change in compliance was observed in the control group ($p = 0.500$). Among initially non-compliant mothers, only 2 (4.9%) became compliant, whereas 39 (95.1%) remained non-compliant. All mothers who were compliant at baseline remained compliant at the posttest assessment (100%). These findings indicate that the Posyandu cadre empowerment intervention was effective in improving maternal compliance with routine child growth monitoring, whereas routine Posyandu services alone did not produce significant behavioral changes.

## 2. Discussion

a. Characteristics of The Respondents

The results showed that most mothers had a secondary education level and were in productive adulthood, making them more receptive to health information and more active in utilizing Posyandu services. Educational level plays an important role in mothers' ability to understand the importance of routine child weighing and growth monitoring (Pramastri *et al.*, 2024). These findings are consistent with previous studies, which reported that education, knowledge, and the role of cadres are associated with Posyandu utilization (Sinay *et al.*, 2025).

Based on sex, most children were female; however, sex differences did not influence Posyandu utilization because services were provided equally to all children. The average maternal age, which was within the productive age range, indicates that mothers tended to be

more active in receiving health education and monitoring their children's growth, consistent with previous studies. In addition, the age range of children under five in this study highlights the importance of routine growth monitoring during early childhood as a critical period for child growth and development (Marbun, Irnawati and Sari, 2024).

b. The Effect of Posyandu Cadre Empowerment on Mothers' Knowledge Regarding Routine Weighing in the Working Area of Pringsewu Community Health Center, Pringsewu District, 2026

These findings demonstrate that Posyandu cadre empowerment was effective in improving mothers' knowledge regarding routine weighing in the working area of Pringsewu Community Health Center, Pringsewu District, in 2026.

These findings demonstrate that Posyandu cadre empowerment was effective in improving mothers' knowledge regarding routine child weighing in the working area of Pringsewu Community Health Center, Pringsewu District, in 2026. The findings can be explained using the Community Empowerment Theory, which was extensively developed by Glenn Laverack as a health promotion approach emphasizing community participation, capacity building, leadership development, and local ownership in addressing health problems. According to this theory, sustainable improvements in health behavior are achieved when community members are empowered to identify health problems, strengthen their capacities, and actively participate in implementing solutions rather than relying solely on healthcare professionals. The theory has been widely adopted by the World Health Organization (WHO) in promoting community-based primary healthcare and has also been implemented in Indonesia through community health programmes such as Posyandu, where community health volunteers (cadres) serve as the main agents of health promotion and disease prevention.

The core principle of Community Empowerment Theory is that improving the knowledge, skills, confidence, and participation of community members will strengthen their ability to influence health behaviors within their own communities. In this study, the cadre empowerment intervention enhanced cadres' competencies through structured training, mentoring, and continuous support, enabling them to provide more effective health education and counseling to mothers. Consequently, mothers received clearer and more accurate information regarding the importance of routine child growth monitoring, resulting in significant improvements in their knowledge after the intervention.

These findings are consistent with the WHO guideline on community health worker programmes, which recommends strengthening community health workers through adequate training, supportive supervision, and continuous health system support to improve maternal and child health services and community participation (World Health Organization, 2022). Similarly, Perry et al. (2021) reported that empowering community health workers contributes to improved health knowledge, greater utilization of preventive health services, and stronger adherence to recommended health practices. The findings of Syabrullah et al. (2025) also demonstrated that strengthening the competencies of Posyandu cadres through training and mentoring improves their ability to provide nutrition education and support the prevention of child malnutrition.

The consistency between the present study and previous evidence suggests that empowering Posyandu cadres does not merely improve cadre competency but also enhances the quality of health communication delivered to mothers. Cadres who possess adequate knowledge, communication skills, and confidence are more capable of explaining the benefits of routine child weighing, responding to mothers' concerns, and motivating regular participation in Posyandu activities. As a result, mothers become more knowledgeable about child growth monitoring and are better prepared to recognize the importance of routine weighing as an essential component of child health surveillance.

This study also contributes new evidence to the existing literature by demonstrating that a structured Posyandu cadre empowerment intervention improves not only maternal knowledge but also attitudes and compliance simultaneously within a quasi-experimental pretest–posttest control group design. Unlike many previous studies that primarily evaluated cadre competency or a single behavioral outcome, this study provides more comprehensive evidence that strengthening the capacity of Posyandu cadres can generate broader behavioral improvements among mothers. These findings reinforce the importance of community empowerment as an effective strategy for strengthening primary healthcare services and improving child growth monitoring programmes in Indonesia.

This improvement indicates that Posyandu cadres play an important role as effective health education agents due to their close social relationship with mothers, making health information easier to understand and accept. Increased knowledge is also associated with greater maternal awareness regarding the utilization of Posyandu services for monitoring child growth and development (Zafira and Widiyarta, 2025).

These findings demonstrate that Posyandu cadre empowerment was effective in improving mothers' knowledge regarding routine child weighing in the working area of Pringsewu Community Health Center, Pringsewu District, in 2026. The improvement in maternal knowledge may be explained by the community empowerment approach, which emphasizes strengthening the capacity of community members through education, training, mentoring, and active participation. Within the Posyandu setting, empowering cadres enhances their competencies in communicating health information and providing consistent counseling to mothers. As cadres become more knowledgeable and confident in delivering health education, mothers receive clearer, more accurate, and more comprehensive information regarding routine child growth monitoring. This process facilitates the acquisition of new knowledge and improves mothers' understanding of the objectives, procedures, and importance of routine weighing.

These findings are also consistent with Notoatmodjo's theory, which explains that knowledge is the result of a learning process that occurs after individuals receive information through their senses, particularly through educational activities and effective communication (Notoatmodjo, 2014). In the present study, the cadre empowerment intervention provided a structured mechanism for transferring health information from trained cadres to mothers, thereby increasing mothers' understanding of routine child growth monitoring. From the perspective of Community Empowerment Theory, strengthening the knowledge and competencies of community health volunteers enables them to function more effectively as community educators, improving the dissemination of health information at the community level.

The present findings are consistent with previous studies reporting that cadre empowerment significantly improves maternal knowledge through continuous community-based health education. Tiyas (2024) found that repeated education delivered by Posyandu cadres increased mothers' understanding of the benefits of Posyandu services and the importance of routine child growth monitoring. Similarly, Syabrullah et al. (2025) reported that training and mentoring programmes enhanced cadres' competencies in delivering nutrition education, which subsequently improved mothers' understanding of child health and nutrition. The consistency of these findings suggests that strengthening the capacity of community health volunteers is a reliable strategy for improving maternal knowledge across different community settings.

The present study contributes additional evidence by demonstrating that a structured Posyandu cadre empowerment programme significantly improves maternal knowledge using a quasi-experimental pretest–posttest control group design with a comparison group. Unlike previous studies that primarily evaluated cadre competencies, this study directly measured

changes in mothers' knowledge following the empowerment intervention, thereby providing stronger evidence regarding the effectiveness of cadre empowerment in enhancing maternal understanding of routine child growth monitoring.

Previous research also found that training and empowerment of health cadres effectively improved mothers' knowledge regarding nutritional status monitoring and routine Posyandu visits. Active cadres who provided education were able to increase maternal awareness regarding the importance of regular child health monitoring. Furthermore, other study reported that community health worker empowerment programs significantly improved maternal knowledge regarding child growth monitoring and preventive child healthcare (Widyaningsih, Kanita and Wulandari, 2025).

Overall, the reduction in score variability after the intervention indicates that maternal knowledge became more evenly distributed. This suggests that education delivered through cadres not only increased the average knowledge level but also standardized mothers' understanding regarding the importance of routine child weighing.

c. The Effect of Posyandu Cadre Empowerment on Mothers' Attitudes Toward Routine Weighing in the Working Area of Pringsewu Community Health Center, Pringsewu District, 2026

In contrast, the control group showed no meaningful change, with the average attitude score changing with a difference of 0.06 points. These findings indicate that Posyandu cadre empowerment was effective in improving mothers' attitudes toward routine child weighing in the working area of Pringsewu Community Health Center, Pringsewu District, in 2026.

In contrast, the control group showed no meaningful change, with the average attitude score changing by only 0.06 points. These findings indicate that Posyandu cadre empowerment was effective in improving mothers' attitudes toward routine child weighing in the working area of Pringsewu Community Health Center, Pringsewu District, in 2026. The improvement in maternal attitudes can be explained by the structured empowerment process implemented through cadre training, mentoring, and repeated health education sessions. Unlike the control group, mothers in the intervention group were exposed to consistent messages delivered by trained Posyandu cadres who possessed better knowledge, communication skills, and confidence. This interaction not only increased mothers' understanding but also strengthened their perceptions regarding the importance of routine child weighing, making them more receptive and supportive of Posyandu activities. Positive attitudes are more likely to develop when health information is delivered repeatedly by trusted community members who understand the local social and cultural context.

This finding is consistent with the principles of Community Empowerment Theory, developed by Laverack (2022), which emphasizes that empowering community members through capacity building, participation, leadership development, and continuous support strengthens their ability to influence others within the community. In the context of Posyandu, empowered cadres function not merely as information providers but also as facilitators who build trust, encourage dialogue, and create a supportive environment for learning. Such interpersonal interactions enable mothers to interpret health information more positively, thereby fostering favorable attitudes toward routine child growth monitoring.

However, the sustainability of these positive attitudes should be interpreted cautiously. Although the present study demonstrated significant improvements immediately after the intervention, attitude is a dynamic construct that may decline over time if reinforcement is absent. Community empowerment is widely recognized as a continuous rather than a one-time intervention. The empowerment requires ongoing participation, mentoring, and community engagement to maintain changes in knowledge and attitudes (Laverack, 2022). Similarly, the World Health Organization (2022) recommends continuous training, supportive supervision,

and regular follow-up for community health workers to sustain programme effectiveness and community engagement. Therefore, a single empowerment programme may be sufficient to initiate positive attitudinal changes, but periodic refresher training, supportive supervision, and continuous health education are likely necessary to maintain these improvements over the long term.

The present findings are consistent with previous studies reporting that cadre empowerment improves maternal attitudes toward child health services. Tiyas (2024) demonstrated that repeated education provided by Posyandu cadres significantly strengthened mothers' positive attitudes toward child growth monitoring because continuous interaction enabled mothers to better understand the benefits of regular Posyandu participation. Likewise, Syabrullah et al. (2025) reported that mentoring programmes enhanced cadres' communication competencies, resulting in more effective health education and more positive maternal attitudes. Rather than merely confirming previous findings, the present study extends the existing evidence by demonstrating that a structured cadre empowerment programme implemented within a quasi-experimental pretest–posttest control group design can produce measurable improvements in maternal attitudes compared with a control group receiving routine services. These findings suggest that the effectiveness of empowerment lies not only in increasing cadres' competencies but also in establishing sustained educational interactions between cadres and mothers, which are essential for developing and maintaining positive attitudes toward routine child weighing.

This improvement in attitudes suggests that the cadre empowerment intervention successfully strengthened mothers' positive perceptions of routine child weighing. Attitude is an affective construct that reflects an individual's feelings, evaluations, and degree of acceptance toward a particular object or health issue. Notoatmodjo (2014) explains that attitudes develop through learning processes involving information exposure, experience, and social interaction. In this study, cadre empowerment created opportunities for repeated communication and discussion between trained Posyandu cadres and mothers, allowing health information to be delivered in a manner that was understandable and relevant to the local context. Such interactions likely facilitated greater acceptance of the importance of routine child growth monitoring, resulting in more favorable attitudes among mothers. This interpretation is consistent with the findings of Alam, Sulistia, and Asriadi (2023), who reported that community-based health education effectively improved participants' attitudes by increasing their understanding and acceptance of health-related information.

In the present study, the improvement in mothers' attitudes was likely influenced by the way the empowerment programme was implemented. The intervention did not merely provide information to Posyandu cadres but also strengthened their capacity through structured training and mentoring before they delivered health education to mothers. As a result, cadres were better prepared to explain the objectives and benefits of routine child weighing, respond to mothers' questions, and provide information using language that was easier to understand within the local community context. This interactive communication process enabled mothers to clarify misconceptions and develop a more positive perception of routine child growth monitoring. Therefore, the observed improvement in attitudes was not solely attributable to the educational content itself but also to the enhanced competence and confidence of empowered cadres in facilitating health education.

This interpretation is consistent with Community Empowerment Theory, which emphasizes that capacity building enables community members to become more effective facilitators of health promotion rather than passive recipients of health programmes (Laverack, 2022). Through empowerment, cadres acquire not only knowledge but also communication and facilitation skills that improve the quality of interactions with community members. Consequently, mothers are more likely to understand, appreciate, and positively evaluate the

importance of routine child weighing. Nevertheless, the present study evaluated attitudes only immediately after the intervention. Therefore, it cannot determine whether these positive attitudes will be sustained over time. Continuous mentoring, refresher training, and regular supervision may be necessary to reinforce the competencies of Posyandu cadres and maintain positive maternal attitudes in the long term, as recommended by the World Health Organization (2022) for community health worker programmes.

These findings are consistent with previous study, who reported that Posyandu cadre empowerment significantly improved maternal attitudes toward Posyandu utilization, as well as previous study, who found that cadre-based education effectively improved maternal attitudes toward child health behavior (Abrori *et al.*, 2025).

An other study also reported that community health worker interventions significantly improved maternal attitudes toward child growth monitoring and preventive health services because community-based approaches enable continuous communication and are more easily accepted by mothers (Setyoningrum, Liyanovitasari and Aryanti, 2025).

For the attitude variable, the correlation coefficient (r) was 0.888 with a p-value < 0.001, indicating a very strong relationship between pre- and post-intervention scores. This suggests that although there was an overall improvement in attitudes, individual patterns remained relatively consistent. The reduction in standard deviation from 3.99 to 3.68 also indicates that maternal attitudes became more homogeneous after the intervention. Therefore, Posyandu cadre empowerment proved effective not only in improving the average attitude score but also in establishing more uniformly positive perceptions among mothers of children under five.

d. The Effect of Posyandu Cadre Empowerment on Mothers' Compliance with Routine Weighing in the Working Area of Pringsewu Community Health Center, Pringsewu District, 2026

In the control group, indicating no significant change in compliance. These findings demonstrate that Posyandu cadre empowerment was effective in improving mothers' compliance with routine child weighing in the working area of Pringsewu Community Health Center, Pringsewu District, in 2026.

In the control group, no significant change in compliance was observed. These findings demonstrate that Posyandu cadre empowerment was effective in improving mothers' compliance with routine child weighing in the working area of Pringsewu Community Health Center, Pringsewu District, in 2026. The improvement in maternal compliance is unlikely to be solely a direct effect of the empowerment programme. Rather, it is likely to reflect a sequential process initiated by strengthening mothers' knowledge through health education delivered by empowered Posyandu cadres. Better knowledge enabled mothers to understand the purpose and benefits of routine child weighing, while the accompanying improvement in attitudes increased their acceptance of the importance of regular participation in Posyandu activities. These cognitive and affective changes may have subsequently encouraged mothers to comply more consistently with routine child weighing. Therefore, the findings suggest that cadre empowerment contributes to improved compliance through a gradual process of strengthening knowledge and fostering more positive attitudes rather than producing an immediate behavioral change.

This interpretation is consistent with Notoatmodjo's health education concept, which explains that the adoption of health-related practices generally occurs through progressive stages beginning with the acquisition of knowledge, followed by the formation of positive attitudes, and ultimately leading to the implementation of health practices (Notoatmodjo, 2014). Likewise, Community Empowerment Theory proposes that empowerment enhances community capacity by improving access to knowledge, strengthening communication, and increasing active participation. In the context of this study, empowering Posyandu cadres

improved their ability to educate and mentor mothers, creating repeated opportunities for learning and discussion that gradually reinforced mothers' willingness to participate in routine child growth monitoring.

The present findings are consistent with previous studies demonstrating that continuous cadre empowerment improves maternal participation in child health programmes. Tiyas (2024) reported that repeated education and mentoring delivered by Posyandu cadres increased mothers' attendance at routine growth monitoring activities because mothers developed a better understanding of the benefits of regular weighing. Similarly, Syabrullah et al. (2025) found that strengthening cadres' competencies through training and ongoing mentoring enhanced the quality of community health education, which was associated with greater community participation in child nutrition programmes. Rather than suggesting that empowerment directly changes compliance, these studies, together with the present findings, indicate that sustained educational interactions between empowered cadres and mothers create a gradual process through which improved knowledge and more positive attitudes are translated into better compliance.

Nevertheless, the present study assessed compliance shortly after the intervention; therefore, the long-term sustainability of this improvement remains uncertain. Compliance with routine child weighing may decline if reinforcement is not maintained. Continuous cadre empowerment through refresher training, supportive supervision, and regular mentoring is therefore likely to be necessary to sustain mothers' participation in routine growth monitoring programmes, as recommended by the World Health Organization (2022) for community health worker programmes.

This increase in compliance indicates that Posyandu cadres play an important role in shaping community health behavior through education, Posyandu schedule reminders, motivation, and direct assistance. Factors such as knowledge, attitudes, motivation, and social support from cadres also influence maternal compliance in bringing children to Posyandu regularly (Afriyanti *et al.*, 2025).

Theoretically, these findings are consistent with the Health Belief Model, which explains that health behavior is formed when individuals have strong perceptions regarding the benefits and preventive value of a health action. In addition, social support theory emphasizes that emotional, informational, and motivational support from cadres as part of the community can improve maternal compliance with health behaviors (Glanz, Rimer and Viswanath, 2015).

These findings are consistent with the previous study, which showed that Posyandu cadre empowerment significantly improved maternal compliance with routine weighing visits. Other research also found that support from health cadres was associated with increased maternal compliance in utilizing Posyandu services. Furthermore, previous study reported that community health worker empowerment programs significantly improved maternal compliance with child growth monitoring services through repeated education and community-based approaches (Has, Ariestiningsih and Mukarromah, 2021).

Overall, the results of this study indicate that Posyandu cadre empowerment not only improved mothers' knowledge and attitudes but also significantly changed behavior toward greater compliance with routine child weighing as an effort for early detection of child growth and nutritional problems.

This study has several limitations that should be considered when interpreting the findings. First, the relatively small sample size (82 participants) may limit the statistical power of the study and reduce the generalizability of the findings to broader populations. Second, the study was conducted in only one Community Health Center (Pringsewu Community Health Center), which may not fully represent the characteristics of mothers and Posyandu services in other regions with different demographic, socioeconomic, and healthcare contexts. Third, the follow-up period after the cadre empowerment intervention was relatively short, allowing assessment

only of short-term changes in mothers' knowledge, attitudes, and compliance. Consequently, the long-term sustainability of these behavioral changes could not be evaluated. Finally, the study relied on self-reported questionnaires to measure maternal knowledge, attitudes, and compliance. Such measurements are subject to recall bias and social desirability bias, as participants may have provided responses they perceived to be socially acceptable rather than reflecting their actual behaviors. Future studies are recommended to include larger and more diverse samples, involve multiple healthcare settings, extend the follow-up period to assess long-term intervention effects, and incorporate objective measures of compliance, such as attendance records or direct observations, to strengthen the validity and generalizability of the findings.

## D. CONCLUSION AND SUGGESTIONS

The Pringsewu Community Health Center should integrate cadre empowerment into its routine maternal and child health programme by implementing periodic capacity-building activities, refresher training every six months, monthly mentoring during Posyandu implementation, supportive supervision by nutritionists and midwives, regular monitoring and evaluation of cadre performance, and the provision of standardized educational media to ensure consistent health messages. The health center should also establish a follow-up mechanism for children who miss routine weighing through home visits or reminder systems involving Posyandu cadres. These strategies are expected to sustain improvements in mothers' knowledge, attitudes, and compliance regarding routine child weighing.

## E. ACKNOWLEDGEMENT

The researcher would like to thank the academic community of the University of Lampung and the respondents who contributed to this research.

## F. REFERENCES

Abrori, A. *et al.* (2025) 'Penyuluhan Kesehatan Melalui Integrasi Layanan Primer Pada Posyandu Untuk Pencegahan Stunting di RW 02 Kelurahan Kaligawe', *JGEN : Jurnal Pengabdian Kepada Masyarakat*, 3(1).

Afriyanti, D. *et al.* (2025) 'Posyandu Management in an Effort to Optimize Monitoring of Child Growth and Development in Curug Village, Depok City', *Jurnal Mandala Pengabdian Masyarakat*, 6(1). Available at: https://doi.org/10.35311/jmpm.v6i1.597.

Alam, Sulistia, H. and Asriadi (2023) 'Pemberdayaan Kader Posyandu dalam Penggunaan Media Putar Antropometri Status Gizi Usia 0-59 Bulan', *JURNAL PENGABDIAN KEPADA MASYARAKAT* [Preprint]. Available at: https://doi.org/10.30999/jpkm.v13i3.2933.

Dahlan, S. (2020) *Statistik Untuk Kedokteran Dan Kesehatan Deskriptif, Bivariat dan Multivariat.*, *Salemba Medika*.

Glanz, K., Rimer, B. k. and Viswanath, K. (2015) *Health Behavior and Health Education*.

Glanz, K., Rimer, B.K. and Viswanath, K. (2024) *Health behavior: Theory, research, and practice (6th ed.)*. Jossey-Bass.

Has, D.F.S., Ariestiningsih, E.S. and Mukarromah, I. (2021) 'Pemberdayaan Kader Posyandu Dalam Program Pencegahan Stunting Pada Balita Di Masa Pandemi Covid-19', *Indonesian Journal of Community Dedication in Health (IJCDH)*, 1(2).

Indonesian Ministry Of Health Development Policy Board (2023) 'Indonesian Health Survey (Survei Kesehatan Indonesia) 2023', *Ministry of Health*, pp. 1–68.

Kartika, D.Y., Nuraini and Asriwati (2024) 'Analisis Faktor yang Mempengaruhi Kinerja Kader Posyandu di Wilayah Kerja UPTD Puskesmas Sidodadi Kecamatan Kota Kisaran Barat', *Jurnal Kebidanan, Keperawatan dan Kesehatan*, 3.

Laia, Y., Nasution, Z. and Asriwati (2023) 'Analisis faktor risiko kejadian kurang gizi pada balita di Puskesmas Pembantu Tanjung Sari', *Jurnal Kesehatan dan Fisioterapi*, 3(1).

Laverack, G. (2022) 'Health Promotion Practice', *Health Promotion Practice*, 3(3), pp. 433–434. Available at: https://doi.org/10.1177/152483990200300315.

Marbun, U., Irnawati, I. and Sari, L.P. (2024) 'Pemberdayaan Kader Posyandu Sebagai Upaya Meningkatkan Pengetahuan dan Keterampilan dalam Pemanfaatan Buku KIA', *Jurnal Abmas Negeri (JAGRI)*, 5(2). Available at: https://doi.org/10.36590/jagri.v5i2.1300.

Notoatmodjo, S. (2014) *Promosi Kesehatan dan Perilaku Kesehatan*. Jakarta: Rhineka Cipta.

Perry, H.B., Zulliger, R. and Rogers, M.M. (2021) 'Community Health Workers in Low-, Middle-, and High-Income Countries: An Overview of Their History, Recent Evolution, and Current Effectiveness', *Annual Review of Public Health*, 42, pp. 399–421. Available at: https://doi.org/10.1146/annurev-publhealth-090419-102734.

Pramastri, E.X. *et al.* (2024) 'Efektivitas Edukasi Kesehatan Mental Sebagai Upaya Peningkatan Kapasitas Mental Kader Posyandu Remaja Kampung X Surakarta', *SEMAR (Jurnal Ilmu Pengetahuan, Teknologi, dan Seni bagi Masyarakat)*, 13(2).

Setyoningrum, U., Liyanovitasari and Aryanti, N. (2025) 'Peningkatan Peranan Kader Kesehatan dalam Pelaksanaan Posyandu Integrasi Layana Primer (ILP) di Dusun Tegalrejo Desa Lerep Kabupaten Semarang', *Indonesian Journal of Community Empowerment (Ijce)*, 7(1).

Sinay, H. *et al.* (2025) 'Peningkatan Pemanfaatan Layanan Posyandu Untuk Kesehatan Balita Di Desa Masnana, Kabupaten Buru Selatan', *Jompa Abdi: Jurnal Pengabdian Masyarakat*, 4(2). Available at: https://doi.org/10.57218/jompaabdi.v4i2.1580.

Sita, M., Nurfadhila, N. and Sumiyati, S. (2024) 'Peningkatan Pengetahuan Kader Posyandu Melalui Kegiatan "Refreshing Kader"', *Jurnal Pengabdian Masyarakat Gunung Sari*, 2(2). Available at: https://doi.org/10.58294/jpmgs.v2i2.175.

Suryaningsih, E.K., Fauzia, F.R. and Sudiyasih, T. (2023) 'Program Peka Penting, strategi menurunkan dan mencegah stunting', *Hayina*, 3(1). Available at: https://doi.org/10.31101/hayina.3413.

Sutrio, S. *et al.* (2025) 'Pendampingan Kader Posyandu dalam Pemantauan Praktik MP-ASI Usia 6–23 Bulan di Puskesmas Bandar Agung, Lampung Tengah', *ABDI UNISAP: Jurnal Pengabdian Kepada Masyarakat*, 3(2). Available at: https://doi.org/10.59632/abdiunisap.v3i2.459.

Syabrullah, A. *et al.* (2025) 'Optimization of the Role of Kader in the Primary Care Service Integration Program', *Jurnal SOLMA*, 14(2). Available at: https://doi.org/10.22236/solma.v14i2.18283.

Tiyas, D.W. (2024) 'Peningkatan Partisipasi Kunjungan Posyandu Balita Melalui Penguatan Dukungan Mitra', *Jurnal Pengabdian Masyarakat Bangsa*, 1(11). Available at: https://doi.org/10.59837/jpmba.v1i11.648.

UNICEF (2025) *Child Malnutrition - UNICEF Data*, *UNICEF Data*.

Utami, Y.T. *et al.* (2025) 'Digitalisasi pencatatan data balita dalam upaya menuju zero case stunting', *Jurnal Peduli Masyarakat*, 7(5).

WHO (2022) *WHO Guideline on Health Policy and System Support to Optimize Community Health Worker Programmes*. Geneva: World Health Organization. Available at: https://www.who.int/publications/i/item/9789240055634.

Widyaningsih, T.S., Kanita, M.W. and Wulandari, N.K. (2025) 'Peran Kader Posyandu Balita Dalam Memotivasi Ibu Balita Berkunjung Ke Posyandu', *Jurnal Pengabdian Kepada Masyarakat (JPKM)*, 7(3).

Zafira, A.V.J. and Widiyarta, A. (2025) 'Partisipasi Masyarakat dalam Kegiatan Posyandu di Kota Surabaya', *JIIP - Jurnal Ilmiah Ilmu Pendidikan*, 8(7). Available at: https://doi.org/10.54371/jiip.v8i7.8626.