



Knowledge of early stunting detection among posyandu cadres and mothers of under-five children: A cross-sectional study in Jambi city

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ABSTRACT

Stunting remained a persistent public health problem in Jambi City, and Tanjung Sari Village recorded the highest number of stunted toddlers within its community health center working area. Since Posyandu cadres and mothers of toddlers served as the two key actors responsible for early stunting detection, this study analyzed the knowledge levels of both groups regarding early detection of stunting in that village. A quantitative descriptive design with a cross sectional approach was applied. Total sampling was used to enroll thirty five active Posyandu cadres, while seventy five mothers of toddlers were selected through simple random sampling. Data were collected using structured questionnaires that had been tested for validity and reliability, and were analyzed univariately. The results showed that most cadres, sixty eight point six percent, and most mothers, fifty eight point seven percent, had a high level of knowledge. However, both groups demonstrated weaker understanding in specific technical areas, cadres in interpreting child growth curves and mothers in recognizing physical signs of stunting and determining the appropriate timing for complementary feeding. These complementary gaps suggested that generally adequate knowledge alone had not been sufficient to lower the stunting burden in the study area. The findings indicated a need for targeted, technically focused, and jointly delivered training for cadres and mothers to strengthen community based early stunting detection efforts in Jambi City.

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1. INTRODUCTION

Stunting remains one of the public health issues receiving global attention due to its impact on physical growth, cognitive development, productivity, and the quality of future human resources (Aulia & Purnamawati, 2025; Harahap, Putra, et al., 2025). The World Health Organization (WHO) estimates that approximately 148 million children under five worldwide are stunted, making this condition a critical indicator for achieving the health and nutrition targets of the Sustainable Development Goals (Harahap et al., 2026). In Indonesia, the prevalence of stunting has shown a downward trend in recent years, but it remains at a level that requires attention due to various factors, such as nutritional status, child-rearing practices, socioeconomic conditions, sanitation, and

access to health services (Darmawan et al., 2022; Harahap et al., 2024). In Jambi Province, the prevalence of stunting also decreased from 22.4% in 2021 to 13.5% in 2023; however, research indicates that various risk factors at the family and community levels continue to contribute to stunting among toddlers, making early detection efforts a priority in stunting prevention (Harahap et al., 2026; Harahap, Aurora, et al., 2025).

Efforts to accelerate the reduction of stunting in Indonesia have received strong policy support through Presidential Regulation No. 72 of 2021 on Accelerating the Reduction of Stunting, which emphasizes the importance of integrated nutrition-specific and nutrition-sensitive interventions from the central to the local levels. This policy directs the strengthening of primary health care services through the optimization of Posyandu, capacity building for community health workers, monitoring of toddler growth, and family education as key strategies for preventing stunting (Aulia & Purnamawati, 2025). At the regional level, the Jambi Provincial Government supports the implementation of national policies through various programs—including growth screening, nutrition education, and the continuous enhancement of Posyandu volunteers' competencies—carried out on an ongoing basis (Harahap et al., 2025). Various community service activities in Jambi City also demonstrate that volunteer training, education on complementary feeding, and monitoring of toddler growth continue to be strengthened as part of the implementation of promotive and preventive health services (Darmawan et al., 2024; Harahap, Aurora, et al., 2025). Furthermore, strengthening the integration of primary care through public health education further underscores the local government's commitment to supporting the national target of accelerating the reduction of stunting (Shafira et al., 2023, 2025).

Posyandu are the spearhead of community-based health services and play a strategic role in early stunting detection through routine monitoring of toddlers' growth (Darmawan & Harahap, 2017). Their effectiveness depends heavily on the competence of Posyandu volunteers as primary implementers of screening and health education (Saharuddin, 2020; Sitorus et al., 2022), while mothers of toddlers act as decision-makers in feeding and growth monitoring, making their knowledge equally decisive for prevention outcomes (Hamzah et al., 2024; Sitorus et al., 2021). Synergy between both groups is therefore a crucial foundation for effective, timely, and sustainable early detection at the community level (Pitayanti et al., 2022; Rohmah & Arifah, 2021; Yulaikhah et al., 2020). Compared with structural determinants such as socioeconomic status, sanitation, and access to health services, which require long-term, cross-sectoral intervention, the knowledge of Posyandu volunteers and mothers is a more proximal and directly modifiable factor that can be strengthened through education and training within a relatively short period (Darmawan et al., 2022; Harahap et al., 2024), making it a strategic and scientifically justified entry point for improving early stunting detection.

Ideally, Posyandus are expected to be able to conduct early detection of stunting through routine monitoring of toddlers' growth, education for parents, and early referral if growth disorders are identified, so that interventions can be provided as early as possible (Darmawan & Harahap, 2017; Rinayati et al., 2023). However, conditions on the ground indicate that these outcomes have not yet been fully optimized, despite the implementation of various stunting prevention programs. Data from the 2024 e-PPGBM system for the City of Jambi show that Jambi Timur Subdistrict remains the area with the highest number of stunted toddlers, totaling 83 cases, while Tanjung Sari Village within the service area of the Talang Banjar Community Health Center (Puskesmas) recorded the highest number of stunted toddlers, at 26 cases. These conditions indicate that the decline in stunting prevalence has not been fully accompanied by optimal early detection efforts at the community level, a situation influenced, in part, by the knowledge of Posyandu volunteers and mothers of toddlers regarding the signs, risk factors, and procedures for early stunting detection (Harahap et al., 2025; Hidayati et al., 2024). The gap between program targets and these empirical conditions highlights the need to evaluate the knowledge levels of Posyandu cadres and mothers of toddlers as a basis for developing more effective educational strategies to support the accelerated reduction of stunting.

Various studies have shown that improving the knowledge of Posyandu volunteers plays a crucial role in supporting the success of early detection and prevention of stunting at the community level. Saharuddin (2020) reported that training was able to improve volunteers' knowledge regarding the early detection of stunting, thereby optimizing the implementation of growth monitoring. Similar findings were also reported by Sitorus et al., (2021), who demonstrated that mentoring enhances volunteers' knowledge and skills in conducting stunting screenings. Research by Rohmah and Arifah (2021) confirms that optimizing the role of health volunteers contributes to strengthening stunting prevention programs in the community, while Yulaikhah et al., (2020) and Utario et al., (2022) demonstrate that educating volunteers and parents can raise awareness regarding the importance of early detection and growth monitoring of toddlers. Other studies have also reported that empowering both community health workers and mothers of toddlers simultaneously yields better results for stunting prevention efforts than focusing solely on one of these target groups (Hamzah et al., 2024; Sitorus et al., 2022).

Most previous studies have focused on efforts to build the capacity of Posyandu cadres through training, mentoring, and community empowerment activities to improve their ability to detect stunting early (Rinayati et al., 2023; Saharuddin, 2020; Sitorus et al., 2021). Other studies have also developed various forms of education, growth screening, and the use of media or applications as tools to support the early detection of stunting in toddlers (Hindratni, 2022; Rochmawati et al., 2023; Wibowo & Chuvita, 2023). In Jambi City, several studies have focused more on stunting risk factors, growth screening, and public health education activities without comprehensively examining the knowledge levels of Posyandu cadres and mothers of toddlers—the two key actors in the early detection of stunting (Darmawan et al., 2024; Harahap et al., 2026; Harahap et al., 2025). Therefore, this study is novel because it simultaneously analyzes the knowledge of Posyandu cadres and mothers of toddlers regarding the early detection of stunting in the area with the highest incidence of stunting in Jambi City. The study results are expected to provide preliminary information on the readiness of these two groups to support the implementation of the accelerated stunting reduction program at the community level.

Most previous studies focused on building the capacity of Posyandu cadres through training, mentoring, and community empowerment to improve early stunting (Rinayati et al., 2023; Saharuddin, 2020; Sitorus et al., 2021), while others developed education, growth screening, and application-based tools to support early detection toddlers (Hindratni, 2022; Rochmawati et al., 2023; Wibowo & Chuvita, 2023). In Jambi City, several studies examined stunting risk factors and public health education without comprehensively examining the knowledge of Posyandu cadres and mothers of toddlers—the two key actors in early detection (Darmawan et al., 2024; Harahap et al., 2026; Harahap et al., 2025). To date, no study has simultaneously measured and compared the knowledge of both groups within a single research locus, even though they jointly determine the effectiveness of growth monitoring and referral at the community level (Hamzah et al., 2024; Sitorus et al., 2022), existing studies examined each group separately, leaving their comparative knowledge profile unexplored. This study is therefore novel in simultaneously analyzing both groups' knowledge in the area with the highest stunting incidence in Jambi City.

The knowledge of Posyandu cadres and mothers of toddlers is fundamental to successful early stunting detection, as both play a direct role in growth monitoring, education, and decisions regarding children's health (Rohmah & Arifah, 2021; Sitorus et al., 2022). Low knowledge of early signs, risk factors, and detection procedures can delay identification of toddlers with growth disorders, preventing optimal intervention (Hamzah et al., 2024; Hidayati et al., 2024). Because Posyandu-based screening is the first line of Indonesia's national stunting reduction strategy, limited detection capability threatens the acceleration targets mandated by Presidential Regulation No. 72 of 2021, as growth-faltering toddlers may not be identified and referred in time (Aulia & Purnamawati, 2025; Harahap et al., 2026)—a systemic bottleneck rather than a mere individual deficit. This underscores the importance of scientific data on the knowledge of Posyandu volunteers and mothers as a basis for more targeted educational programs (Aulia & Purnamawati, 2025; Shafira et al., 2024).

This study aims to analyze this knowledge among Posyandu cadres and mothers of toddlers in Tanjung Sari Village, Jambi City.

2. RESEARCH METHOD

This study used a quantitative descriptive design with a cross-sectional approach to describe the level of knowledge on early stunting detection among Posyandu cadres and mothers of children under five, without testing causal relationships between variables. The study was conducted at the Posyandu of Tanjung Sari Village, within the working area of the Talang Banjar Community Health Center (Puskesmas), Jambi City, from October to December 2025. The population consisted of 35 active Posyandu cadres and 291 mothers of children aged 0–59 months; a total sampling technique was applied for cadres, while the sample of mothers was determined using the Slovin formula with a 10% margin of error ($n = N/(1+Ne^2) = 291/(1+291 \times 0.1^2) = 74.4 \approx 75$), then allocated proportionally across the seven Posyandu units through simple random sampling (Arikunto, 2019).

Knowledge was measured using two structured 20-item questionnaires for Posyandu cadres and mothers of toddlers, covering six indicators of early stunting detection: (1) the definition and concept of stunting, (2) causes and risk factors, (3) signs and symptoms, (4) growth monitoring and interpretation of the KMS/WHO Z-score chart, (5) prevention efforts including exclusive breastfeeding and complementary feeding practices, and (6) referral and follow-up actions when growth deviations are identified (Hidayati et al., 2024; Rinayati et al., 2023). Data collection followed a structured procedure: (1) enumerator calibration to standardize understanding of the questionnaire, (2) administration of the questionnaire during ongoing Posyandu activities, and (3) scoring of each response (correct = 1, incorrect = 0). Respondents' knowledge was then classified as low (<76%) or high ($\geq 76\%$) following Arikunto (2019) categorization criteria, in which a score of $\geq 76\%$ of the maximum possible score is classified as good/high, 56–75% as fair, and <56% as poor—a cut-off widely applied in Indonesian descriptive health-knowledge studies.

Prior to use, both questionnaires were tested for validity and reliability on 10 cadres and 10 mothers at Talang Banjar Posyandu, an area with similar characteristics outside the main sample. Item validity was assessed through item-total score correlation (valid if $r > 0.30$), and reliability was tested using Cronbach's Alpha (reliable if $\alpha \geq 0.70$) (Sugiyono, 2019). All 20 items of the cadre questionnaire showed correlation values above 0.30 with a Cronbach's Alpha of 0.910, while the mother questionnaire showed correlation values ranging from 0.316–0.810 with a Cronbach's Alpha of 0.918. Secondary data on stunting cases in Tanjung Sari Village were obtained from the Jambi City Health Office (2025). Collected data were processed through editing, coding, entry, and cleaning, then analyzed univariately to describe frequency distributions of categorical variables (education, occupation, knowledge level) and the numerical variable (maternal age). All respondents provided written informed consent, with assurance of confidentiality and the right to withdraw at any time.

3. RESULTS AND DISCUSSIONS

Characteristics of Respondents

The characteristics of respondents in this study were examined based on the educational background of Posyandu cadres and mothers of toddlers who participated as samples in Tanjung Sari Village, an area within the working region of the Talang Banjar Community Health Center (Puskesmas) that recorded the highest number of stunted toddlers in Jambi City in 2024. Educational background was chosen as the primary characteristic to be described because, according to Lawrence Green's behavioral theory, education functions as a predisposing factor that shapes an individual's capacity to receive, comprehend, and apply health-related information, including information on the signs, risk factors, and procedures for early detection of stunting. Since Posyandu cadres act as the frontline implementers of growth monitoring and health education, while mothers of toddlers serve as the primary decision-makers in their children's daily care and nutrition, the educational profile of

both groups provides essential context for interpreting their subsequent knowledge outcomes regarding early stunting detection, as presented in Table 1.

Table 1. Distribution of respondents by education level

Education Level	Posyandu Cadres (n=35)	%	Mothers of Toddlers (n=75)	%
Elementary school (SD)	2	5.7%	3	4.0%
Junior high school (SMP)	6	17.1%	8	10.7%
Senior high school (SMA)	22	62.9%	57	76.0%
Diploma	1	2.9%	0	0%
Bachelor's degree (Si)	4	11.4%	7	9.3%
Total	35	100%	75	100%

Source: Primary Data (2025)

As shown in Table 1, the educational profile of both respondent groups was dominated by secondary-level education. Among the 35 Posyandu cadres, the majority (62.9%; n=22) had completed senior high school (SMA), followed by junior high school (17.1%; n=6), bachelor's degree (11.4%; n=4), elementary school (5.7%; n=2), and diploma-level education (2.9%; n=1). A broadly similar pattern was observed among the 75 mothers of toddlers, where senior high school graduates constituted an even larger majority (76.0%; n=57), followed by junior high school (10.7%; n=8), bachelor's degree (9.3%; n=7), and elementary school (4.0%; n=3), with no respondents reporting diploma-level education. This distribution indicates that both groups possessed a relatively adequate basic educational foundation, dominated by secondary education, which theoretically supports their capacity to absorb health-related information delivered through counseling, training, or printed media at the Posyandu level. Nevertheless, the small proportion of respondents with higher education (diploma or bachelor's degree) in both groups — only 14.3% among cadres and 9.3% among mothers — suggests that formal education alone may not be sufficient to guarantee comprehensive understanding of more technical aspects of early stunting detection, such as interpreting growth charts or recognizing early physical signs of growth faltering, a pattern that is further examined in the knowledge results presented in the following sections.

Knowledge of Posyandu Cadres on Early Stunting Detection

The overall knowledge level of Posyandu cadres regarding early stunting detection is summarized in Table 2. Of the 35 cadres who served as respondents, the majority (68.6%; n=24) were categorized as having a high level of knowledge, while 31.4% (n=11) fell into the low-knowledge category, based on the $\geq 76\%$ correct-answer cut-off applied to the 20-item questionnaire. This result indicates that most Posyandu cadres in Tanjung Sari Village already possess an adequate general understanding of early stunting detection, although nearly one-third of them have not yet reached the expected knowledge threshold, signaling a continued need for structured training and mentoring at the cadre level.

Table 2. Distribution of Posyandu cadres by knowledge category

Knowledge Category	n	%
Low (<76%)	11	31.4%
High ($\geq 76\%$)	24	68.6%
Total	35	100%

Source: Primary Data (2025)

Examination of item-level responses revealed that the weakest areas of understanding were concentrated in two indicators: signs and symptoms of stunting, and the ability to read growth curves (KMS/WHO Z-score). As shown in Table 3, the item with the lowest proportion of correct answers concerned the basic definition of stunting, with only 20.0% of cadres (7 of 35) answering correctly, meaning that as many as 80.0% failed to correctly identify the concept despite it being the most fundamental knowledge component for early detection work. Similarly, low performance was observed on items requiring cadres to determine the appropriate follow-up action when a toddler's

body weight failed to increase (45.7% correct), to identify a child at risk of stunting based on height-for-age or length-for-age measurements (48.6% correct), and to interpret a child's growth status when the height-for-age Z-score fell below -2 SD (60.0% correct). By contrast, cadres performed very well ($\geq 97\%$ correct) on items related to educational and procedural duties, such as referral actions, monitoring roles, and the function of Posyandu in stunting prevention.

Table 3. Knowledge indicators with the lowest proportion of correct answers among Posyandu cadres

Indicator	Item Assessed	Correct (n)	Correct (%)
Signs and symptoms	Definition of stunting	7/35	20.0%
Growth curve reading	Follow-up action when body weight does not increase	16/35	45.7%
Growth curve reading	Identifying risk based on height/length-for-age	17/35	48.6%
Growth curve reading	Interpreting growth status at TB/U < -2 SD	21/35	60.0%
Growth curve reading	Identifying signs of weight faltering	24/35	68.6%

Source: Primary Data (2025)

This pattern suggests that while Posyandu cadres are generally well-informed about their administrative and educational responsibilities, a considerable gap remains in their technical competence to recognize and interpret the clinical signs of stunting itself, particularly through growth-chart reading, a skill that is directly tied to accurate and timely case identification in the field. This finding contrasts with the results reported by Shafira et al., (2024) in Pejaten, where the majority of cadres (73.3%) were found to have low knowledge overall, suggesting that the knowledge profile of Posyandu cadres can vary considerably across regions depending on the intensity of prior training and supervision. Nevertheless, both findings support the broader argument put forward by Harahap et al., (2025) and Harahap et al., (2024), who emphasize that stunting is a multifactorial condition shaped by the interaction of nutritional, environmental, and socioeconomic determinants, meaning that cadre knowledge alone cannot be expected to fully resolve the stunting burden without being paired with adequate enabling and reinforcing conditions at the community level, consistent with Lawrence Green's behavioral framework. These results therefore underline the importance of targeted refresher training focused specifically on growth-curve interpretation and recognition of early physical signs of stunting, rather than general health education alone, to close the most consequential knowledge gaps identified among cadres in this study (Puspasari, 2021).

Knowledge of Mothers of Toddlers on Early Stunting Detection

The overall knowledge level of mothers of toddlers regarding early stunting detection is summarized in Table 4. Of the 75 mothers who participated as respondents, 58.7% ($n=44$) were categorized as having a high level of knowledge, while 41.3% ($n=31$) fell into the low-knowledge category based on the $\geq 76\%$ correct-answer cut-off. Although the majority of mothers demonstrated adequate knowledge, the gap between the high- and low-knowledge groups was considerably narrower than that observed among Posyandu cadres, indicating that a substantial proportion of mothers in Tanjung Sari Village have not yet reached an optimal level of understanding regarding the early signs, risk factors, and prevention of stunting in their children.

Table 4. Distribution of mothers of toddlers by knowledge category

Knowledge Category	n	%
Low ($< 76\%$)	31	41.3%
High ($\geq 76\%$)	44	58.7%
Total	75	100%

Source: Primary Data (2025)

Examination of item-level responses showed that the weakest areas of understanding among mothers were concentrated in the indicators of prevention and signs/symptoms of stunting. As shown in Table 5, the item with the lowest proportion of correct answers concerned the appropriate timing of complementary feeding (MP-ASI) initiation, with only 24.0% of mothers (18 of 75)

answering correctly, meaning that 76.0% did not understand the correct timing of this critical preventive practice. The second weakest item was the ability to recognize physical signs of stunting in a child, with only 29.3% correct (22 of 75). Other notably weak items included the practice of exclusive breastfeeding according to age (45.3% correct) and the impact of stunting on a child's growth and development (52.0% correct). In contrast, mothers performed strongly ($\geq 94\%$ correct) on items related to routine Posyandu visits and the general importance of growth monitoring, indicating stronger awareness of Posyandu-based monitoring behavior than of the underlying clinical and nutritional knowledge needed to recognize and prevent stunting independently.

Table 5. Knowledge indicators with the lowest proportion of correct answers among mothers of toddlers

Indicator	Item Assessed	Correct (n)	Correct (%)
Prevention	Appropriate timing of complementary feeding (MP-ASI)	18/75	24.0%
Signs and symptoms	Recognizing physical signs of stunting	22/75	29.3%
Prevention	Exclusive breastfeeding according to age	34/75	45.3%
Signs and symptoms	Impact of stunting on growth and development	39/75	52.0%
Risk factors	Causes of stunting in children	54/75	72.0%

Source: Primary Data (2025)

This pattern suggests that although mothers are generally aware of the importance of attending Posyandu and monitoring their children's growth, their understanding of the more technical preventive actions, particularly the correct timing of complementary feeding and the ability to visually recognize early physical signs of stunting remains limited. This finding is consistent with Hidayati et al., (2024), who similarly reported that both cadres and parents often show stronger participatory awareness than substantive technical knowledge of early stunting detection, and with Sitorus et al., (2022), who found that empowerment programs targeting mothers alongside cadres tend to produce more balanced improvements in stunting-prevention knowledge than programs focused on either group alone. The gap identified in complementary-feeding knowledge is particularly concerning given that Harahap et al., (2025) identified feeding-related and nutritional factors as key hierarchical risk factors for stunting among children under five in urban Jambi, reinforcing the relevance of this specific knowledge deficit to the local stunting burden. These results support the argument advanced by Hamzah et al., (2024) and Yulaikhah et al., (2020) that structured, ongoing education and mentoring for mothers of toddlers, rather than one-time counseling, is needed to translate general health awareness into the specific technical knowledge required for effective early detection and prevention of stunting at the household level.

Integrative Discussion: Synergy Between Cadres and Mothers

When the knowledge profiles of Posyandu cadres and mothers of toddlers are examined side by side, a consistent pattern emerges that goes beyond what either group's results could reveal in isolation. Both groups achieved a majority "high knowledge" classification, 68.6% among cadres and 58.7% among mothers, yet in both cases the strongest performance clustered around participatory and procedural knowledge (attending Posyandu, understanding referral duties, recognizing the general purpose of growth monitoring), while the weakest performance clustered around technical, clinically oriented knowledge (interpreting growth curves for cadres; recognizing physical signs of stunting and timing complementary feeding correctly for mothers). This convergence supports the premise stated at the outset of this study, that early stunting detection cannot be adequately understood by examining cadres or mothers separately, since the two groups occupy complementary positions in the same detection and response chain, and a technical blind spot in either one limits the effectiveness of the system as a whole, regardless of how well the other performs.

This pattern is well explained through Lawrence Green's behavioral framework, which distinguishes predisposing factors (knowledge, attitudes, values), enabling factors (access to facilities and support systems), and reinforcing factors (support from health workers and the surrounding social environment) as joint determinants of health behavior. In this framework, cadres function primarily as an enabling and reinforcing element for mothers, forming the structural bridge between

household caregiving and the formal health system, while mothers' own knowledge functions as the predisposing factor that shapes their day to day caregiving decisions. Darmawan & Harahap (2017) similarly found that the effectiveness of Posyandu activities in Jambi City depends heavily on how closely cadre practices conform to official implementation guidelines, suggesting that even well intentioned cadres can under deliver on the enabling function if their own technical competence is incomplete. Aulia & Purnamawati (2025) literature review reinforces this point, concluding across multiple studies from 2023 to 2025 that the contribution of Posyandu cadres to stunting intervention is consistently mediated by the depth of their technical training rather than their motivation or coverage alone.

The synergy between the two groups is clearest when their weakest indicators are compared directly. Cadres struggled most with reading growth curves, the tool that would let them flag a child's growth trajectory before problems become visible, while mothers struggled most with recognizing physical signs of stunting and timing complementary feeding, actions a well-trained cadre would normally reinforce through counseling Sitorus et al., (2022). This asymmetry carries direct implications for detection effectiveness: each group's weakness sits where the other's strength is needed, so detection accuracy is bounded by whichever gap remains unaddressed, and improving only one group yields limited gain unless the other's gap closes in parallel. Sitorus et al., (2022) support this, reporting that programs simultaneously strengthening cadres and mothers produce more balanced, durable improvements than programs empowering only one group. This is reinforced by Rohmah & Arifah (2021), who argue that optimizing the cadre role only strengthens prevention when paired with raising caregiver knowledge, and by Puspasari et al., (2025), whose training model showed that moving cadres from passive knowledge to active practice requires structured, hands-on skill building.

At the same time, these findings must be read against the fact that Tanjung Sari Village, despite reasonably strong knowledge scores in both groups, remains the area with the highest recorded number of stunted toddlers within the Talang Banjar Puskesmas working area. A plausible scientific explanation lies in Lawrence Green's distinction between predisposing, enabling, and reinforcing factors: knowledge is a predisposing factor shaping intention and capability, but only translates into reduced stunting when enabling conditions (household nutrition, sanitation, economic resources) and reinforcing conditions (institutional support) are also present, so good knowledge alone cannot offset unfavorable structural conditions Harahap et al., (2025) identified risk factors extending well beyond caregiver knowledge, including household-level nutritional and environmental conditions, while Harahap et al., (2026) similarly reported multifactorial predictors spanning family, economic, and environmental domains in Batanghari District. Harahap et al., (2024) further showed that family-level determinants such as hygiene and access to clean water affect related growth-faltering conditions in Jambi City. Together, these studies indicate that knowledge is necessary but not sufficient, enabling correct action only when other supporting conditions are present.

These findings carry clear programmatic implications. Because the knowledge gaps identified in both groups are specific and technical rather than general, interventions are likely to be more effective if they are similarly specific: growth curve interpretation refresher training for cadres, and targeted complementary feeding and sign recognition education for mothers, delivered jointly rather than as separate, disconnected programs. Several existing local initiatives already point toward feasible models for this integration. Rinayati et al., (2023) demonstrated that structured skill upgrading for cadres aligned with Permenkes RI No. 2/2020 measurably improved stunting detection competence, while Pitayanti et al., (2022) "Deni Cheting" (Deteksi Dini Cegah Stunting) initiative and Hindratni (2022) use of the PrimaKu application illustrate how simple, tool assisted approaches can support both cadres and parents in monitoring child growth more accurately between formal training sessions. Wibowo & Chuvita (2023) further proposed a personal health record design specifically intended to help track and communicate growth data between cadres and mothers,

directly addressing the interpretive gap identified in this study. Finally, Azizah & Wardhani (2020) stunting aware cadre movement in Ringinpitu and Shafira et al., (2025) work on strengthening primary care integration at the Puskesmas level both suggest that sustainable improvement depends on embedding these technical competencies within routine Posyandu and Puskesmas systems, rather than treating them as isolated training events, reinforcing the conclusion that the synergy between well informed cadres and well informed mothers, supported by consistent institutional reinforcement, is what ultimately determines whether early stunting detection succeeds at the community level.

4. CONCLUSION

This study found that Posyandu cadres and mothers of toddlers in Tanjung Sari Village, Jambi City, generally possess adequate knowledge of early stunting detection, 68.6% of cadres and 58.7% of mothers categorized as high knowledge, yet both groups share a comparable technical gap: cadres in interpreting growth curves, mothers in recognizing physical signs of stunting and timing complementary feeding. This complementary weakness explains why good general knowledge has not translated into a lower stunting burden here, supporting the conclusion that knowledge alone is necessary but not sufficient for effective early detection. The main contribution of this study is providing the first simultaneous, comparative evidence on cadre and maternal knowledge gaps in Jambi City's highest-burden stunting area, offering Posyandu-level programs a concrete basis for strengthening early detection. Three strategic recommendations follow: joint, indicator-specific refresher training pairing growth curve interpretation for cadres with sign recognition and complementary feeding education for mothers; visual job aids integrated into routine Posyandu sessions; and institutionalized cadre-mother pairing during home visits. Future research should extend this descriptive design into an analytic study testing the knowledge-stunting relationship, incorporating household-level nutritional and environmental factors, and evaluating integrated cadre-mother training interventions over time.

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