Ilomata International Journal of Social Science

OPEN ACCESS

RECEIVED 21 October 2025
ACCEPTED 27 March 2026
PUBLISHED 30 April 2026

CITATION
Asyraf M, Lestari Y, Anindya A, (2026). Persuasive Messages in Stunting Prevention Efforts in Koto Tangah Nagari, West Pasaman Regency. Ilomata International Journal of Social Science. 7 (2), 723-730.
doi: 10.61194/ijss.v7i2.1992

TYPE Original Research
PUBLISHED 30 April 2026
DOI 10.61194/ijss.v7i2.1992
VOL 7 Issue 2 April 2026

Persuasive Messages in Stunting Prevention Efforts in Koto Tangah Nagari, West Pasaman Regency

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Abstract

Stunting remains a major public health challenge in Indonesia, particularly in West Pasaman. This qualitative case study utilizes the Elaboration Likelihood Model (ELM) to examine how stunting prevention messages are processed by caregivers in Nagari Koto Tangah. Data were gathered through interviews with mothers, cadres, and midwives, along with observations and documentation. The study identifies two primary processing routes. Most participants follow the peripheral route, where message acceptance is driven by trust in familiar figures (midwives and cadres), social proximity, or external incentives like social assistance (PKH) requirements. A smaller group engages in central processing, typically those with higher education or personal experience with child nutrition issues. Key findings suggest that technical jargon like "stunting" often hinders understanding. In contrast, everyday language (e.g., "malnutrition" or "small body"), concrete examples, and direct face-to-face interaction facilitate deeper comprehension and a greater intent to act. Face-to-face communication proved more effective than static materials like posters. However, several barriers to effective communication persist, including crowded service environments, limited opportunities for dialogue, one-way information flow, and household dynamics—such as husbands' resistance to immunization. Additionally, attendance is frequently motivated by social assistance rather than health awareness. The study concludes that effective health communication in rural contexts depends on trusted messengers delivering localized, interactive, and actionable content. This approach encourages caregivers to move beyond passive routine toward meaningful engagement with stunting prevention.

KEYWORDS

stunting prevention; health communication; elaboration likelihood model (elm); peripheral; central processing.

Introduction

Stunting is a chronic nutrition problem with serious consequences for children's physical growth, cognitive development, and long-term productivity. The World Health Organization sets a 20% prevalence as the upper acceptable threshold; however, Indonesia's rate remained 21.6% in 2022 (K. K. R. Indonesia, 2023; UNICEF, 2021). This gap underscores the need for more effective interventions, including the optimization of health-communication strategies. Prior studies indicate that well-designed educational and persuasive communication can improve nutrition knowledge, strengthen caregiving practices, and support behaviour change that helps prevent stunting (Rahman et al., 2022). In West Sumatra, stunting prevalence reached 25.2% in 2022, with Pasaman Barat recording the highest rate (Barat, 2023). Within this district, Nagari Koto Tangah (Koto Balingka Sub-district) ranks at the top. Routine Posyandu activities aim to prevent stunting by providing guidance on diet, caregiving, and sanitation. Outcomes, however, remain suboptimal. Some residents attend Posyandu irregularly or focus only on child weighing, causing them to miss the counselling and health-education components—an issue associated with a higher risk of stunting (Nizami et al., 2023). Others depend on informal sources of nutrition information, such as family members, peers, mass media, or social media, where accuracy is inconsistent—a pattern also observed among Indonesian women more broadly (Rahmawati et al., 2021). Similar challenges in

maternal participation and the effectiveness of Posyandu-based stunting-prevention efforts have been reported in other regions of Indonesia (Puriastuti et al., 2025).

The core challenge in West Pasaman—particularly in Nagari Koto Tangah—focuses on access to services and message reception. Although midwives and cadres deliver monthly messages on nutrition, caregiving, and stunting prevention, many residents report incomplete comprehension or divergent interpretations of those messages. Some attend only for weighing and pay limited attention to explanations; others accept messages passively out of trust in the messenger rather than on the basis of message content. In addition, posyandu attendance is often motivated by external incentives—such as the requirement to attend in order to receive social assistance through Program Keluarga Harapan (PKH)—rather than by a genuine desire to understand health information. Limited parental knowledge and suboptimal caregiving practices further weaken the effectiveness of persuasive messages. Inherited practices are maintained by the parents who lack understanding of age-appropriate complementary feeding, regular growth monitoring, or environmental hygiene that are mostly not aligned with medical recommendations, hindering internalization of posyandu messages in daily routines. Household-level dynamics, including the influence of husbands on decisions such as immunization, also shape how messages are ultimately accepted or rejected. This required a different approach to deliver the messages.

From the perspective of the Elaboration Likelihood Model (ELM), these differences reflect variation in information-processing routes. Recipients with sufficient motivation and cognitive capacity tend to use the central route, processing messages more deeply and forming attitudes that are more enduring and predictive of behaviour (Siev et al., 2022). Conversely, recipients with lower motivation or limited comprehension are more likely to use the peripheral route, where acceptance is driven by communicator credibility or delivery cues. In the context of Nagari Koto Tangah, the use of local language, contextually relevant content, and simple visual aids can enhance reception and foster active engagement (Hoover et al., 2018). Against this background, the present study analyzes the reception of persuasive messages in stunting-prevention efforts in Nagari Koto Tangah through the ELM lens, with the aim of formulating more effective, socio-culturally appropriate communication strategies.

Methods

This study employed a qualitative approach with a case study design. The research site was Nagari Koto Tangah, Koto Balingka Sub-district, West Pasaman Regency, Indonesia, selected purposively due to its relatively high stunting prevalence and the active implementation of posyandu activities (Barat, 2023). Data were collected through in-depth, semi-structured interviews with nine informants, consisting of five mothers/pregnant women, three posyandu cadres, and one village midwife, all of whom were directly involved in posyandu activities. Informants were selected purposively based on their roles and experiences related to child nutrition and community health services. Interviews were audio-recorded with participants' consent and transcribed verbatim. To ensure confidentiality, all informants were anonymized using codes. A summary of informant characteristics is presented in Table 1.

In addition to interviews, non-participant observation of posyandu sessions and the review of supporting documents (such as attendance records and health education materials) were conducted to support data triangulation. Both source triangulation and technique triangulation were applied to enhance data credibility. Data analysis followed the interactive model of Miles and Huberman, consisting of data reduction, data display, and conclusion drawing. Analytically, the process began with open coding, whereby interview transcripts were read repeatedly to identify meaningful units related to communication practices, message reception, and persuasive strategies. Codes were then compared iteratively across informants through constant comparison, allowing patterns and similarities to emerge. These codes were subsequently grouped into broader thematic categories which were refined through ongoing comparison between interview data, observational notes, and documentary sources. The Elaboration Likelihood Model (ELM) was used as an analytical framework to identify the dominant route of persuasive communication—whether central or peripheral—in health message delivery during posyandu activities. Data saturation was considered achieved when no new themes or substantive insights emerged from successive interviews. This study adhered to basic research ethics principles. All participants were informed about the purpose of the study, provided verbal informed consent prior to data collection, and were assured of confidentiality and anonymity throughout the research process.

Table 1. Characteristics of Research Informants

Informant Code	Role	Age (Years)	Occupation
UL	Mother (pregnant)	37	Housewife
AH	Mother	27	Junior High School Teacher
MH	Mother	30	Housewife
EH	Pregnant Woman	20	Housewife
IH	Pregnant Woman	24	Housewife
AR	Posyandu Cadre	41	Housewife
GM	Posyandu Cadre	29	Housewife
YM	Posyandu Cadre	26	Housewife
NI	Village Midwife	31	Village Midwife

Result and Discussion

Patterns of Message Reception and Sources of Trust

Based on in-depth interviews with informants in Nagari Koto Tangah, most mothers and pregnant women were not familiar with the technical term stunting. They found everyday equivalents such as "kurang gizi" (malnourished), "kurang berat" (underweight), "badannya kecil" (small-bodied), or "kurang tinggi" (short stature) easier to understand. As MH (30 years) noted,

"The term 'stunting' sounds like a doctor's term, so it seems scary. People here more often say the child is short or small-bodied" MH, 16 June 2024.

These statements indicate a persistent language gap: when technical terms are not immediately grounded in examples drawn from daily life, the meaning feels distant and difficult to grasp. A similar pattern appeared for IH (24 years), who had encountered the term stunting through social media five years earlier but noted that it was rarely used explicitly at posyandu—residents more often hear "kurang gizi" or "berat badan kurang," which are considered more familiar and less intimidating. EH (20 years), a young first-time pregnant mother, first encountered the term at posyandu during her early pregnancy:

"I only learned the word stunting from the midwife recently. I

had never heard it before because I had never attended any health education session" EH, 17 June 2024).

In short, unfamiliar language stops people at the "doorway" before they can engage with the message itself.

A second factor is trust in the messenger. Respondents tended to trust midwives and posyandu cadres whom they know and meet routinely. UL (37 years) stated,

"If it's the midwife speaking, I trust her more. Because she seems knowledgeable and speaks gently. If someone else speaks, sometimes I doubt it" UL, 14 June 2025.

Mode of delivery also matters. Face-to-face communication is more effective than printed materials; as AR (cadre) noted, "If it's just reading a banner, they don't care. But if I come directly and say, 'Ma'am, please bring your child for weighing tomorrow, so they stay healthy,' then they come" AR, 14 June 2024.

When sessions are not crowded, conversations become more personal—midwife NI emphasized choosing words carefully and using a reassuring tone so that mothers feel comfortable asking questions. In other words, grounded language and a trusted figure direct people to halt from their activities, listen, and begin to consider change.

Posyandu attendance in Nagari Koto Tangah is also shaped by social-incentive requirements. Several informants acknowledged that regular posyandu attendance is a prerequisite for receiving social assistance through the Program Keluarga Harapan (PKH). As MH candidly remarked,

"Who doesn't attend posyandu regularly? Everyone does, especially if you want to get the assistance" MH, 16 June 2024.

This external motivation serves as a peripheral cue that boosts participation numbers but does not necessarily translate into deeper message processing.

To systematize these observations, interview answers were grouped into interrelated themes: (1) comprehension of terminology, (2) trusted sources, (3) modes of reception, (4) enabling and constraining factors, and (5) shifts in attitudes/behaviors. The grouping summarizes common tendencies that show how participants are more likely to use the central route and when they remain in the peripheral route. They also highlight visible variation across respondents by linking the cognitive factors (knowledge, education, and concrete examples), emotional factors (closeness and safety to ask questions), and social factors (authority, familiarity with midwives/cadres, and household dynamics including spousal influence).

Media and channels used by the posyandu also shape message reception. Several media are employed—face-to-face counseling, posters, and banners—but direct interpersonal communication is markedly more effective. As AR (cadre) confirmed, banners are usually only glanced at, while residents focus more when messages are explained directly during posyandu. Other respondents, including AH and IH, likewise reported that verbal, interactive delivery is easier to understand than printed materials.

Regarding modes of reception, the interviews indicate that face-to-face communication using simple language and concrete examples relevant to everyday life is the most effective approach. Explanations delivered in a familiar, interactive setting tend to trigger central-route processing because audiences can connect the content to their own experiences. This was evident in MH's case: she initially believed her child's small stature was hereditary, but after the midwife's repeated explanations about the role of nutrition, she underwent a cognitive shift—

"I used to think my child was small because of heredity. But after the midwife explained, it turned out it could also be due to inadequate nutrition from early childhood. From then on, I became more careful about my child's food" MH, 16 June 2025.

These findings are consistent with (Abiola et al., 2012) who show that dialogic interpersonal interaction enhances cognitive processing and information retention in health interventions.

Information-Processing Routes and Enablers/Barriers

Building on the two processing routes, several factors consistently encourage shifts toward the central route. First, personal relevance: family experience with nutrition problems or pregnancy heightens attention. As MH explained, after her cognitive shift from attributing her child's small stature to heredity to understanding the role of nutrition, she became more attentive to her child's diet and more engaged during posyandu sessions. Second, higher education and active information seeking: AH, a junior high school teacher, noted that she first learned about stunting during her university studies and deepened her understanding by reading health content online and attending posyandu regularly—

"I knew the term stunting during college, but I understood it better after joining posyandu. I also often read from Instagram or health websites" AH, 15 June 2025.

Third, direct face-to-face dialogue with trusted communicators creates space for questions and clarification—IH confirmed,

"I had read about stunting on Instagram, but I understood better when it was explained directly by the midwife at posyandu" IH, 18 June 2025.

This pattern aligns with Indonesian program evidence: nutrition education combined with cadre engagement improves knowledge and practice compared with one-way lectures (Effendy et al., 2020).

The ELM helps clarify why such shifts occur. Movement from cue-based compliance (peripheral) to argument-based consideration (central) requires both motivation and ability to process messages (Susmann et al., 2021). In Nagari Koto Tangah, these preconditions typically cross the threshold when messages are localized in everyday language, linked to personal experience, and dialogued. Once this happens, residents no longer rely solely on the ethos of midwives/cadres; they begin to weigh reasons, test fit with household resources, and formulate realistic small steps.

Language localization is the clearest example. It lowers semantic barriers and raises motivation. As MH put it, "People here more often say the child is short or small-bodied" rather than using the term "stunting." When familiar wording is used and linked to everyday examples, mothers feel able to follow. Curiosity then emerges—signaling an early move to the central route.

The mechanism is also visible in the posyandu service flow. A rapid sequence (registration–weighing–recording–brief counseling) tends to elicit peripheral processing—compliance driven by credibility and conformity—rather than deeper evaluation. EH (early pregnancy) noted,

"At first I didn't know anything about stunting. But when the midwife explained, I wanted to know more, especially for my first child" EH, 17 June 2025,

indicating emerging curiosity that could develop into central-route processing with appropriate follow-up. When messages are personalized and a brief dialogue window is provided, signs of elaboration appear. GM (cadre) described her own learning trajectory:

"At first I also didn't understand stunting clearly, but after training I understood. Now I try to explain to mothers using simpler language" GM, 20 June 2025.

In several cases (UL, MH, IH), interviewees indicated a carry-over to intention, although everyday obstacles (for example, a child's poor appetite or limited economic resources) remained. For more informed audiences (AH; IH), the posyandu reinforced existing knowledge; even so, specific information gaps still need to be addressed directly to sustain central-route processing.

Additional barriers to central processing included the

influence of family members on health decisions. Both AH and IH reported that their husbands had resisted childhood immunization due to concerns about post-injection fever, illustrating that message acceptance does not depend solely on individual processing but is also shaped by household-level dynamics. As AH noted, her absence from immunization services was caused by her husband's concerns about side effects. IH similarly reported that her husband had refused immunization for their previous child after the child developed a fever following injection. These experiences highlight that persuasive message reception occurs within a relational context where the attitudes and experiences of family members can override individual receptivity.

In short, familiar language, actionable examples, and space for dialogue are three levers that convert "trusting" into "understanding and readiness to act," consistent with the ELM (Susmann et al., 2021) and domestic program evidence (Effendy et al., 2020).

Theoretically, these patterns are consistent with the Elaboration Likelihood Model (ELM): in crowded sessions with limited interaction time, message reception tends to follow the peripheral route—relying on credibility cues (the professional status of health workers, social closeness)—rather than careful evaluation of arguments (Susmann et al., 2021). Programmatic evidence from Indonesia likewise shows that nutrition education grounded in everyday practice—rather than one-way lectures—has a stronger effect on behavior change (Effendy et al., 2020). National data further indicate that household-level drivers of change do not automatically shift in tandem with increases in service coverage (U. Indonesia, 2024a, 2024b; Laksono et al., 2024). Accordingly, delivery channels at the posyandu should function as mutually reinforcing links: face-to-face interaction as the primary site for micro-dialogue, visual materials as reinforcements, and follow-up home visits by cadres for residents who miss sessions.

Overall, persuasive message reception in Nagari Koto Tangah demonstrates that the effectiveness of health communication depends not only on content but also on social context and delivery strategy. Applying ELM principles, stunting-prevention programs can be designed so that messages are not passively received via the peripheral route but are processed critically via the central route, promoting durable changes in attitudes and behaviors. This approach is aligned with recommendations by Zhang et al. (2023) and Shulman et al. (2020), which emphasize integrating communicator credibility with message relevance in community-based health communication. Nonetheless, the peripheral route remains important for capturing initial attention and building trust, especially where health literacy is limited. In such settings, the credibility of posyandu cadres can be optimized as an entry point, while the substantive content is gradually steered to stimulate deeper elaboration. This dual strategy—combining communicator ethos with clear, concrete arguments—has been shown to strengthen the effectiveness of health communication in rural communities. Community health workers, for example, successfully encourage behavioural change when their personal credibility is paired with persuasive explanations and narratives that feel relevant to everyday life (Wable Grandner et al., 2022). Linked to the ELM, many community members may lack the motivation or cognitive capacity to shift from peripheral to central processing. Communication strategies should therefore be designed to raise engagement, for example by embedding relatable stories, using concrete examples, and linking messages to immediate, visible consequences in daily life. Recent experimental evidence on COVID-19 vaccination messages shows that narrative (vs. non-narrative) formats can elicit stronger cognitive engagement with risk and benefits—consistent with a shift toward more central-route processing in ELM terms (Ye et al., 2021).

Interactive, contextual formats—small-group discussions at the posyandu and home visits—are more likely to move audiences from cue-based reception (peripheral) to deeper elaboration (central), so that messages are not only "heard" but also "considered" and internalized in household routines. Indonesian evidence indicates that nutrition classes coupled with cadre home visits and small-format meetings improve knowledge, self-efficacy, and feeding practices more than one-way lectures, with effects lasting several months post-intervention (Effendy et al., 2020). In community-based services, cadre training combined with home-based growth monitoring strengthens posyandu performance (counseling, growth monitoring), which is a prerequisite for behavioral change at the family level (Miranda et al., 2024). Interventions that actively involve families—through dialogue, rehearsal of actions, and iterative feedback—consistently outperform approaches that rely only on one-way instruction. Multi-component strategies that strengthen interaction, support recognition of risks, and help households plan concrete steps lead to more effective uptake of health behaviours (Mackintosh et al., 2020). Within participatory communication in rural settings, approaches that integrate education with dialogue and empowerment enable community members to connect health messages to everyday constraints such as food prices, time availability, and caregiving roles. Such co-developed communication processes make behaviour-change decisions easier to negotiate and sustain at the household level (Najmah et al., 2024). These conclusions are consistent with recommendations to strengthen the posyandu as a context-responsive, family-oriented education platform (U. Indonesia, 2024a).

Successful reception and meaning-making are shaped by cognitive, emotional, and social factors. Two-way interaction—whether brief small-group dialogue at the posyandu or targeted home visits—facilitates a shift from passive exposure to active reflection and internalization, consistent with program evidence highlighting practice-based education and family engagement as drivers of more durable change (e.g., Effendy et al., 2020; U. Indonesia, 2024a). Accordingly, stunting prevention in West Pasaman should not rely solely on routine persuasive messaging at the posyandu. Communication strategies ought to deliberately elicit central-route processing by enhancing motivation and recipients' capacity to analyze message content, as illustrated in Figure 1. In practice, this entails using clear, non-technical language, grounding advice in everyday experiences, and providing concrete illustrations of the long-term consequences of stunting for physical growth and cognitive development. Conversely, many residents of Nagari Koto Tangah still process messages via the peripheral route, particularly when motivation is low or knowledge about stunting is limited. In such cases, message uptake relies more on non-substantive factors—communicator credibility, speaking style, social relationships, and external incentives such as PKH requirements. This pattern is consistent with Hoover et al. (2018) who find that peripheral processing predominates in rural areas due to limited health literacy.

The diagram illustrates how caregivers in Nagari Koto Tangah process stunting-prevention messages through two distinct pathways, as conceptualized in the Elaboration Likelihood Model (ELM). On the peripheral path, people lean on who is speaking—midwives and cadres they know—plus routine attendance, social closeness, and external incentives such as PKH requirements. That usually yields polite agreement but little that sticks. The central path opens when communicators speak in everyday terms, ground advice in concrete examples, and create brief moments for back-and-forth dialogue. Under those conditions, understanding deepens and intention to act becomes visible. Yet persistent hurdles—technical jargon like

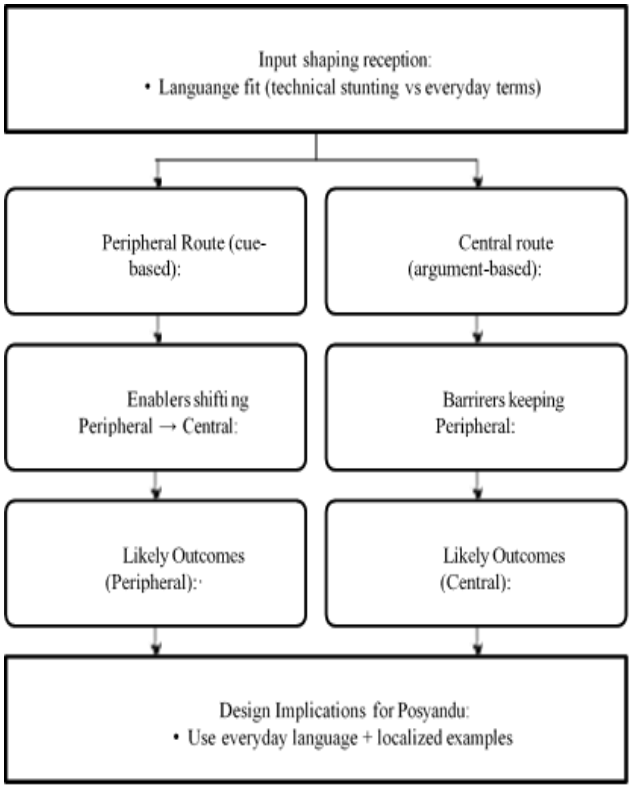

Figure 1. Message Processing Routes in Stunting-Prevention Communication
Source: Research Data Field (2025)

"stunting," a rushed service flow, one-way communication formats, and household-level dynamics including spousal influence on health decisions—often keep caregivers from making that shift.

What this means for posyandu practice is straightforward: start with the communicator's ethos as the door-opener, then move quickly to localized arguments and interactive spaces that invite reflection. In practical terms, we prioritize short face-to-face exchanges, translate technical terms into familiar language, treat visuals as reinforcement (not a substitute) for dialogue, and follow up with home visits for residents who miss sessions. This is the dual track that fits both ELM and our field experience: guiding families from trust-based compliance to meaningful elaboration—so understanding lasts longer and household behaviors actually change.

Peripheral→Central (ELM): Conditions and Mechanisms

Within the ELM framework, some recipients scrutinize message content (central route), while others follow cues such as who is speaking (peripheral route). When terminology is understood, examples are concrete, and there is space to ask questions, people tend to think more deeply. Conversely, if everything feels unfamiliar or rushed, they "nod along" out of trust in midwives or cadres. This perspective helps explain not only what residents understand, but also how—and why—that understanding is formed. To examine the pattern more systematically, interview responses were grouped into interrelated themes: (1) comprehension of terminology, (2) trusted sources, (3) modes of reception, (4) enabling and constraining factors, and (5) shifts in attitudes/behaviors. The grouping goes beyond summarizing common tendencies; it also reveals variation across informants—when they are more likely to use the central route and when they remain in the peripheral route. It clarifies the links among cognitive factors (knowledge, education, and concrete examples), emotional factors (closeness and a sense of safety to ask questions), and social factors (authority, familiarity with midwives/cadres, and household-level influences).

The interviews show that comprehension of the term "stunting" remains a fundamental barrier to health communication in Nagari Koto Tangah. Most informants are more familiar with everyday phrases such as "kurang gizi," "kurang berat badan," or "badannya kecil," and some find the term stunting "frightening" or "like a doctor's term." When technical terms are not embedded in local context, messages lose emotional proximity and are difficult to process via the central route, as described by the Elaboration Likelihood Model (Petty & Cacioppo, 1986). This aligns with evidence that easy-to-read, plain-language health materials increase processing fluency and self-efficacy, thereby making behaviour change more likely (Okuhara et al., 2020).

Credibility of the communicator also matters. Informants tend to trust messages delivered by midwives and posyandu cadres they know. UL (37 years) stated,

> *"If it's the midwife speaking, I trust her more. Because she seems knowledgeable and speaks gently. If someone else speaks, sometimes I doubt it"* UL, 14 June 2025.

Midwives are seen as holding scientific authority, while cadres act as social bridges who understand local conditions. Long-standing emotional ties make messages convincing even when the technical explanation is simple. This reinforces ELM's prediction that, in many cases, communities accept messages via the peripheral route—on the basis of communicator credibility rather than message content—consistent with Petty & Cacioppo (1986) and more recent evidence by (Huang & Liu, 2022).

Regarding modes of reception, face-to-face communication using simple language and concrete, everyday examples is the most effective. Explanations delivered in a familiar, interactive setting tend to activate the central route because audiences can connect the message to personal experience. This was visible in MH's case: she initially attributed her child's small stature to heredity, but after the midwife's explanation linking growth to nutrition, she shifted her understanding and became more attentive to her child's diet. The finding is consistent with (Flax et al., 2022), who show that dialogic interpersonal interaction increases cognitive processing and information retention in health interventions.

Additional enabling factors include social closeness to the communicator, direct experience with nutrition problems, and message relevance to daily life. These operate as motivational triggers that foster cognitive and emotional engagement and thus central processing. As Petty et al. (2009) and Susmann et al., 2021 argue, motivation and personal relevance are key determinants of processing depth and attitude durability; consistent with ELM, elaboration produces more stable attitudes that resist counter-messages. In this setting, localized language, concrete examples, direct dialogue, and family support work together to raise motivation and ability—the two prerequisites for route shifts. Without these elements, reception often plateaus at "polite agreement": sufficient for attendance, but too fragile to sustain everyday practice change.

Visual media without interpersonal interaction are usually insufficient to trigger deep processing, particularly among residents with limited health literacy. AR (cadre) observed,

> *"If it's just reading a banner, they don't care. But if I come directly and say, 'Ma'am, please bring your child for weighing tomorrow, so they stay healthy,' then they come".*

In contrast, face-to-face explanation accompanied by informal discussion prompts engagement and strengthens understanding. Midwife NI noted that a conducive, uncrowded session enables more personal exchanges so that residents feel comfortable asking questions tailored to their circumstances.

Interactions during posyandu services therefore reveal that message reception is strongly shaped by personal motivation, lived experience, and social proximity to the communicator. NI confirmed:

"If the mothers have higher education, they usually ask questions actively. They want to know why a child can become stunted, not just be told to give nutritious food. But that's good—it means they want to understand more deeply" NI, 18 June 2025.

This indicates higher engagement consistent with central-route processing, while those less cognitively involved tend to accept messages emotionally on the basis of trust in the messenger.

By contrast, many residents in Nagari Koto Tangah still process messages via the peripheral route, especially when motivation is low or knowledge about stunting is limited. Uptake relies on non-substantive factors—communicator credibility, speaking style, social relationships, and external incentives such as PKH requirements. As YM (cadre) acknowledged,

"If I'm the one explaining, sometimes they don't believe it. But if the midwife comes directly, everyone listens. Sometimes they come to posyandu just because I invited them, not because they know the importance of weighing the child" YM, 19 June 2025.

This pattern is consistent with evidence from resource-poor rural communities where residents often struggle to find and understand health information, particularly among those with lower education and socioeconomic status (Passi et al., 2023), which constrains their ability to engage more deeply with complex health messages (Obaremi & Olatokun, 2022; Passi et al., 2023).

Interactive, contextual formats—small-group discussions at the posyandu and home visits—are thus more likely to shift audiences from cue-based reception (peripheral) to deeper elaboration (central), so that messages are not only "heard" but also "considered" and internalized in household routines. Evidence from Indonesia shows that nutrition classes coupled with cadre home visits and small-format meetings improve knowledge, self-efficacy, and feeding practices more than one-way lectures, with effects that can persist for several months after the intervention (Effendy et al., 2020). In community-based services, cadre training with home-based growth monitoring enhances posyandu performance—counseling and growth monitoring—which is a prerequisite for behavior change at the family level (Miranda et al., 2024). More broadly, interventions that expand family involvement—two-way counseling and iterative engagement—perform better than purely instructional approaches, and participatory formats that combine education, dialogue, and empowerment help residents connect messages to real-life constraints (Mackintosh et al., 2020). These directions are consistent with recommendations to strengthen the posyandu as a family-oriented, context-responsive education platform (U. Indonesia, 2024a).

Message-Processing Mechanism (ELM): From Peripheral Cues to Elaboration

Reception of persuasive messages on stunting prevention in Nagari Koto Tangah is shaped not only by message quality but also by delivery, communicator credibility, and the fit between language and everyday context. Although posyandu activities are conducted monthly, many residents report only partial comprehension or interpret messages differently from what communicators intend. This aligns with the Elaboration Likelihood Model (ELM), which posits two main routes of reception: a central route and a peripheral route (Petty et al., 2021).

A smaller subset of residents—typically those with higher education or direct experience of child nutrition problems—appear to engage the central route. They critically evaluate content, relate it to personal experience, and weigh the evidence. AH, a junior high school teacher, illustrates this pattern: she first learned about stunting during university, deepened her understanding through posyandu participation and online reading, and now attends posyandu proactively without needing reminders—

"Now I don't wait to be invited to posyandu anymore. Because I know the importance of weighing the child and monitoring development" AH, 15 June 2025.

Similarly, UL demonstrated rational evaluation when she encountered anti-vaccination content on social media but chose to verify it with the midwife:

"I once saw a video on Facebook saying immunization causes high fever, but I still followed the midwife's advice. I asked directly, and she explained that it was normal" UL, 14 June 2025,

indicating deep cognitive involvement prior to attitude formation.

Most informants, however, seem to process messages peripherally. Acceptance is driven more by communicator credibility, emotional closeness, or delivery style than by argument strength. As UL also noted, "If it's the midwife speaking, I trust her more. Because she seems knowledgeable and speaks gently." This pattern mirrors findings in health-communication research, where trust in health experts predicts uptake intentions more strongly than factual knowledge or message content (Austin et al., 2023). Credibility in such contexts derives not only from professional authority but also from social ties and interpersonal familiarity. GM (cadre) emphasized the importance of personal outreach:

"If I come to their house and say there's posyandu tomorrow, they usually come. But if it's only announced through a loudspeaker, many don't come" GM, 20 June 2025.

Consistent with Shulman et al. (2020), communication that aligns with everyday language and social context strengthens processing fluency and engagement, making messages feel more relatable and trustworthy.

Another barrier is resistance to technical terms such as "stunting," perceived as unfamiliar or frightening: "The term 'stunting' sounds like a doctor's term, so it seems scary" (MH, 16 June 2024). Even so, the peripheral route remains valuable for attracting attention and building trust where literacy is limited. A dual strategy that uses communicator ethos as the entry point while progressively steering content toward stronger arguments has shown effectiveness in rural public-health campaigns (Hunt et al., 2021).

Field data also indicate that reception is often shaped by external incentives and routine-driven attendance. Posyandu attendance frequently serves as a prerequisite for social assistance programs (PKH), which boosts participation numbers but means that many residents attend out of obligation rather than a desire to deeply understand health issues. EH illustrated trust-based acceptance:

"I don't really know what vitamin A is for, but the midwife said it's good for the child, so I just give it. Because I just trust her" EH, 17 June 2025.

Overall, effectiveness depends on social context and delivery strategy as much as on content. Applying ELM principles, programs should aim to move audiences from passive, peripheral reception to critical, central processing—integrating communicator credibility with message relevance in community settings (Li et al., 2022; Zhang et al., 2023)

In this study site, trust in midwives and cadres is the primary basis of reception. Face-to-face explanations are consistently easier to understand than printed materials. As ELM predicts, in crowded, time-limited sessions residents rely on credibility cues rather than detailed argument scrutiny (Susmann et al., 2021). NI (midwife) confirmed:

"The residents here, if I'm the one speaking, they usually just comply. But if I explain at length, they don't necessarily grasp it. So sometimes I explain briefly but with examples to make it easy" NI, 18 June 2025.

Our data also identify conditions that help residents move

from merely "trusting" to understanding and readiness to act: localized language, concrete everyday examples, and direct dialogue with the communicator. Under these conditions, informants show cognitive shifts—such as MH's transition from attributing her child's small stature to heredity to understanding the role of nutrition—rather than offering mere polite agreement. Indonesian program evidence supports this: practice-linked nutrition learning outperforms one-way lectures (Effendy et al., 2020). Nationally, expansions in service coverage do not automatically translate into household behavior change without post-session continuity supports (U. Indonesia, 2024b, 2024a; Laksono et al., 2024).

Conclusion

This study demonstrates that the effectiveness of persuasive messages in the stunting-prevention program in Nagari Koto Tangah is strongly shaped by how residents process and make sense of information within the Elaboration Likelihood Model (ELM) framework. The central route tends to be activated among individuals with higher motivation, personal involvement, higher education, and adequate cognitive capacity, enabling critical evaluation of arguments. In contrast, most residents process messages through the peripheral route, where acceptance or rejection is influenced more by communicator credibility, emotional closeness, delivery style, and external incentives such as social-assistance requirements (PKH). Using language that is contextual, emotionally familiar, and relevant to daily experience is more effective than technical terminology that is unfamiliar to the public. Additionally, the influence of family members—including husbands' attitudes toward health services such as immunization—shapes message acceptance at the household level, indicating that persuasive communication must account for relational dynamics beyond the individual recipient. Capacity-building in communication is therefore needed for cadres and health workers to strengthen mild, equitable, and culturally grounded interactions. Communication strategies should combine the strength of communicator credibility with clear, relevant arguments to guide audiences from peripheral toward central processing. Technical health terms such as "stunting" should be explained using accessible equivalents—such as "kurang gizi," "kurang tinggi," or "badannya kecil"—without losing their scientific meaning and linked to concrete examples that resonate with everyday life. This approach is aimed to deepen understanding, enhance motivation, and support sustained behavior change in stunting prevention.

Author contributions

M. Asyraf (First Author): Led study execution and manuscript preparation; conducted field investigation (interviews/observations), handled data collection and curation, and drafted the original manuscript. Organized qualitative data and refined the ELM-based theoretical framing and discussion.

Yayuk Lestari (Second and Corresponding Author): Principal investigator and supervisor; responsible for conceptualization, methodology design, and formal analysis. Provided critical guidance in data interpretation, ensured analytical rigor and theory–evidence coherence, managed project administration and funding acquisition and reviewed all sections for scientific quality and ethical compliance.

Annisa Anindya (Third Author): Writing-review & editing; strengthened clarity, flow, and style. Verified alignment between field data and analysis, refined presentation of results and ensured adherence to journal formatting and referencing standards.

Funding

This study was supported by Universitas Andalas (Contract No. 348/UN16.19/PT.01.03/PSS/2025). The sponsor had no involvement in the study design; data collection, analysis, or interpretation; the decision to publish; or the preparation of the manuscript.

Acknowledgements

We are grateful to colleagues and partner institutions whose support made this research possible. We extend our deepest appreciation to the community of Nagari Koto Tangah, Pasaman Barat for generously sharing their time and valuable insights as research participants. We also thank the posyandu cadres and village midwives for their openness, support, and wholehearted cooperation throughout the data-collection process.

Conflict of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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