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# Gendered Information Seeking and Community Health Communication for Stunting Prevention: Integrating Social Marketing, Nudging and Digital Engagement in Rural Indonesia

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ABSTRACT

Stunting remains a persistent public health issue in rural Indonesia, driven not only by nutritional deficits but also by communication gaps and gendered dynamics in health information access. This study examines how gender influences information-seeking behaviour and how community-based health communication affects knowledge, attitudes, and practices (KAP) related to stunting prevention. Using a quantitative survey design, data were collected from mothers of toddlers in a rural village. The findings reveal that exposure to health communication significantly affects knowledge and attitudes, which subsequently influence healthy practices. However, access to information is uneven and shaped by gender roles, social structures, and media exposure. This study proposes an integrated model combining social marketing, nudging strategies, and digital engagement to strengthen community-based interventions. The findings contribute to health communication literature by emphasising gender-sensitive approaches and offering practical implications for designing scalable communication interventions in low resource settings.

## 1. Introduction

The Stunting remains one of the most pressing public health challenges in Indonesia, particularly in rural communities where access to nutrition information and health services is uneven. (Kurniasari et al., 2022; Muslihah et al., 2022) Communication plays a critical role in shaping nutritional knowledge, family decision-making, and community engagement in stunting prevention programs. However, existing campaigns often focus primarily on mothers, overlooking the broader gender dynamics that influence how nutrition information is accessed, interpreted, and shared within households and communities. This study explores gendered communication patterns in nutrition information seeking and dissemination, as well as the potential role of social marketing, nudging strategies, and digital technologies in strengthening stunting prevention efforts in rural Indonesia.

Stunting remains a critical health challenge in Indonesia, particularly in rural areas where access to information, health services, and proper nutrition is limited. While biomedical factors such as

malnutrition are widely recognised, communication-related factors, especially how information is accessed, interpreted, and acted upon, are equally significant but often overlooked.

In rural communities, mothers play a central role in childcare and nutrition decisions. However, their access to health information is shaped by gender norms, educational background, and communication channels available within the community. (Kurniasari et al., 2026) As a result, understanding gendered information-seeking behaviour is crucial to designing effective health communication strategies.

Previous studies have shown that knowledge alone is insufficient to change behaviour. Instead, behavioural change is influenced by a combination of knowledge, attitudes, and practices (KAP), which are shaped through continuous exposure to communication messages. Therefore, this study integrates KAP with modern communication approaches such as social marketing, nudging, and digital engagement to propose a more comprehensive intervention model.

This research aims to:

1. Analyse the relationship between health communication and KAP related to stunting prevention

2. Examine gendered patterns in information access and interpretation

3. Propose a communication model that integrates behavioural and digital strategies

This study is based on a health communication perspective that emphasises that changes in stunting prevention behaviour are influenced not only by knowledge factors but also by communication dynamics, social norms, and gender relations within households. By integrating the KAP model, gendered information-seeking, social marketing, nudging, and digital engagement approaches, this research views stunting prevention as a complex, multidimensional, and socially contextualised communication process.

**Health Communication and Stunting Prevention**

Health communication plays a strategic role in influencing individual and community behaviour, particularly in addressing complex public health issues such as stunting. Effective health communication does not merely deliver information, but also shapes perceptions, attitudes, and social norms that influence decision-making and behaviour change.

In the context of stunting prevention, communication interventions must go beyond promoting dietary practices to encompass broader aspects, including caregiving behaviour, hygiene practices, and the utilisation of health services. This reflects the multidimensional nature of stunting, which is not only a nutritional issue but also a socio-cultural and communication issue. (Kurniasari et al., 2025)

Furthermore, within the framework of Communication for Development (C4D), health communication is understood as a participatory process that engages communities in dialogue, enabling them to co-create meaning and adopt sustainable health behaviours. Therefore, effective stunting communication requires culturally grounded, community-based, and gender-responsive approaches.

**Knowledge, Attitude, and Practice (KAP) Model**

The Knowledge, Attitude, and Practice (KAP) model explains behavioural change as a sequential process:

a. Knowledge (K): understanding of health information

b. Attitude (A): perception and evaluation of that information

c. Practice (P): actual behaviour

This model has been widely used in public health research to assess the effectiveness of interventions. However, recent studies suggest that the KAP model should not be viewed as a purely

linear process. Instead, behavioural change is influenced by a complex interaction between knowledge, social norms, communication exposure, and environmental factors.

In this context, integrating KAP with health communication strategies enables a more comprehensive understanding of how information translates into behaviour. Communication not only provides knowledge but also reinforces attitudes through repetition, persuasion, and social influence, ultimately shaping sustainable practices.

**Gendered Information Seeking**

Gender plays a significant role in shaping how individuals access, interpret, and use health information. Women, particularly mothers, are often positioned as primary caregivers and are therefore more actively involved in seeking and disseminating nutrition-related information. They typically rely on interpersonal communication channels such as Posyandu cadres, midwives, and family networks. (Andung et al., 2025; Darajat et al., 2022; Ikasari et al., 2025; Kurniasari et al., 2026; Purnaningsih et al., 2025; Puspasari et al., 2025; Putri, 2024; Trisilawati et al., 2025; Widiasih et al., 2025)

However, access to information is not equally distributed. Structural barriers such as limited mobility, lower digital literacy, and socio-cultural norms may restrict women's access to diverse sources of information. At the same time, men often occupy strategic decision-making positions within households, influencing whether health information is acted upon.

This dynamic can be further understood through Gender Role Theory and Gender Power Relations, which explain how socially constructed roles and power hierarchies shape communication practices and decision-making processes within households.

**Social Marketing, Nudging, and Digital Engagement**

To enhance the effectiveness of health communication interventions, this study integrates three strategic approaches: Social Marketing, Nudging and Digital Engagement.

Social marketing applies marketing principles to influence behaviour change for social good. It emphasises audience segmentation, culturally relevant messaging, and the use of appropriate communication channels to ensure that health messages are accessible and persuasive. (Assis & Pascuci, 2025).

Nudging, rooted in behavioural economics, refers to subtle interventions that guide individuals toward healthier choices without restricting their freedom. In the context of stunting prevention, nudges can take the form of reminders, positive framing, or default options that encourage better nutritional practices. (Guo et al., 2025) Digital engagement leverages mobile technologies, social media, and emerging tools such as Artificial intelligence (AI) to expand the reach of health communication. However, the effectiveness of digital approaches is influenced by factors such as digital literacy, access, and trust. (Feichtner et al., 2025; Puspasari et al., 2025)

This can be further explained using the Technology Acceptance Model (TAM), which highlights that individuals are more likely to adopt digital tools when they perceive them as useful and easy to use.

## 2. Method

This research employed a mixed-method exploratory design combining structured questionnaires and semi-structured interviews with community members in rural Madura. Participants included mothers with young children, fathers, adolescents, Posyandu cadres, health workers, and local community leaders. The survey measured gendered patterns in nutrition information-seeking, communication roles, perceptions of social marketing strategies, nudging interventions, gamification approaches, and attitudes toward AI-based health communication. Qualitative interviews were conducted to capture deeper insights into gender norms, communication practices, and digital access related to nutrition education and stunting prevention.

## 3. Result and Discussion

### 3.1 Gendered Decision-Making in Household Nutrition

Research findings indicate that household nutrition decision-making is negotiable, although women remain the primary actors in its implementation. A community leader explained: "Who is more often making decisions regarding family food and nutrition?" Together." (SS, 56, male, community leader) Meanwhile, the younger informant emphasised female dominance: "Who makes decisions related to family food and nutrition more often? Mother/Women." (HP, 20, male, teenager)

This finding aligns with Gender Role Theory, which holds that although decision-making appears to be shared, caregiving and nutrition-related responsibilities remain socially assigned to women. In other words, there is a normative gender-based division of roles that has become entrenched in the social structure of society.

Furthermore, these findings can also be explained through the Intra-household Communication Theory, which views the family as a space for communicative negotiation in which decisions are made through interactions among family members but are still influenced by power relations that are not always equal. In this context, although men are involved in decision-making, women still hold operational roles in daily nutrition practices.

Furthermore, the Gender Power Relations perspective in feminist communication studies shows that power relations within households are often implicit, with women bearing greater responsibilities without full authority over strategic decision-making. (Baxter, 2003; Koyuncu, 2023; Lane, 2023) This explains why women become the main actors in nutrition practices, even though decisions are formally stated as joint outcomes. Thus, nutrition communication within the household is not only influenced by collective decision-making mechanisms but also by internalised gender norms that shape the distribution of roles and responsibilities within the family.

### 3.2 The Importance of Male Involvement in Nutrition Communication

The research results show strong support for male involvement in nutrition communication programs. This is evident from one informant's statement: "It is very important because the presence of a father figure can motivate to participate in the nutrition program." (FK, 28, male, father).

This finding shows that the presence of men, particularly fathers, not only serves as a support but also as a reinforcing factor in the process of health behaviour change at the household level. This is in line with the Social Ecological Model (SEM), which emphasises that individual behaviour does not stand alone, but is influenced by interactions at the interpersonal level, including family support.

Furthermore, these findings can be explained by the Theory of Planned Behaviour (TPB), in which subjective norms, such as support from important people like partners, significantly influence individuals' intentions and behaviours. In this context, the father's involvement can strengthen the legitimacy and encouragement for the mother to implement better nutritional practices.

Furthermore, from the perspective of Gender Transformative Communication, men's involvement in family health issues reflects a shift from a female-centric communication pattern towards a more inclusive and equitable approach. This is important to reduce the burden of roles that have traditionally been borne more by women in caregiving and in nutrition-related decision-making. (Kayongo & Miller, 2019; Keddie & Bartel, 2021). Thus, men's involvement in nutrition communication not only enhances the effectiveness of health interventions but also contributes to more equitable gender relations in household decision-making and health practices. (Kurniasari et al., 2026)

### 3.3 Digital Health Communication and AI Perception

Perceptions of AI-based health communication exhibit two simultaneous tendencies: optimism and doubt. Some respondents showed a positive attitude towards the use of technology: "Very important." (Female respondent, mother) "Very happy because finding information is easier." (Female respondent, mother) However, some respondents also showed uncertainty: "Doubtful." (Female respondent, mother). These findings indicate that the acceptance of digital technology in

health communication remains ambivalent. This is in line with the Technology Acceptance Model (TAM), which posits that technology adoption is strongly influenced by two main factors: perceived usefulness and perceived ease of use. Positive responses reflect the perception that AI technology is beneficial for facilitating access to information, while doubts indicate barriers related to trust or understanding of its use. (Kirlidog & Kaynak, 2013; Or, 2024)

Furthermore, these findings can be explained by the Digital Divide Theory, which highlights gaps not only in access to technology but also in skills, digital literacy, and confidence in using it. In rural communities, this gap is often exacerbated by gender factors, with women having more limited access to and experience with digital technology than men. Furthermore, from the perspective of Health Communication Technology Adoption, the effectiveness of technology in health communication is determined not only by the availability of platforms but also by users' trust in information sources and the relevance of messages to their sociocultural context.

Therefore, acceptance of AI cannot be separated from social trust and prior communication experiences. Thus, although digital technologies like AI have great potential to expand the reach of health communication, their success depends heavily on perceptions of benefits, digital literacy levels, and public trust in the technology.

### 3.4 Family Support and Behavioural Reinforcement

Family responses have proven to play a significant role in determining the success of adopting health communication messages. This is evident from the statement of one of the informants: "When Mother shares nutritional information from AI... Supportive." (Female informant, mother)

These findings indicate that family support, particularly from partners, is an important factor in strengthening the implementation of health behaviours at the household level. This is in line with the Social Support Theory, which emphasises that emotional, informational, and instrumental support from the immediate environment can increase the likelihood that individuals adopt and maintain healthy behaviours.

Additionally, these findings can be explained by the Health Belief Model (HBM), in which individuals are more likely to adopt health behaviours when perceived barriers can be minimised through social support and when there is encouragement from the surrounding environment. In this context, family support reduces doubt and increases an individual's confidence in implementing the recommended nutritional practices.

Furthermore, within the framework of the Theory of Planned Behaviour (TPB), family support can be understood as part of the subjective norm, which is the social pressure that influences a person's intention to behave. When family members provide positive support, individuals are more encouraged to translate knowledge and attitudes into concrete actions.

Thus, a supportive family environment not only serves as a recipient of information but also as a reinforcing agent that bridges the transformation of knowledge into sustainable behavioural practices in stunting prevention. (Netty Dyah Kurniasari, 2025)

### 3.5 Cultural Sensitivity in Communication Strategy

Respondents emphasised the importance of using a communication style that aligns with local cultural values and norms in delivering nutrition messages. This is reflected in the statement of one of the informants: "In a polite manner." (Female informant, mother) These findings indicate that the effectiveness of health communication is determined not only by the content of the message but also by the manner of delivery, which takes into account the community's social and cultural context. This is in line with Social Marketing Theory, which emphasises that effective messages must be audience-centred and tailored to the target audience's values, norms, and cultural preferences.

Additionally, these findings can be explained through Framing Theory, which states that the way a message is packaged or framed influences how it is perceived and received by the audience. In this context, the use of polite language and a non-patronising approach serves as a framing strategy that enhances acceptance of nutritional messages.

Furthermore, from the perspective of Cultural Communication Theory, culturally sensitive communication can build emotional closeness and trust between the communicator and the audience. This is very important in rural communities that still uphold the values of politeness, social hierarchy, and interaction norms.

Thus, culturally sensitive communication strategies not only enhance message comprehension but also strengthen the acceptance and sustainability of behavioural changes in stunting prevention. (Kurniasari et al., 2025)

### 3.6 Integrating KAP with Gender and Communication Dynamics

Overall, the findings of this study support the Knowledge, Attitude, and Practice (KAP) model while expanding it by integrating gender and communication perspectives. The research findings indicate that behavioural changes in stunting prevention are not only influenced by knowledge but also by gender roles, communication networks, and the surrounding socio-cultural context.

The findings show that women remain the main actors in seeking and disseminating nutritional information, both within families and in community networks such as Posyandu activities and WhatsApp groups. However, there is strong support for more inclusive communication strategies that involve men, particularly fathers and community leaders, in the health communication process. Additionally, social marketing approaches that emphasise culturally relevant messages, use local languages, and involve trusted figures have proven more effective at increasing message acceptance. Nudging strategies, such as reminders and positive framing, can also encourage healthier nutritional practices. On the other hand, community-based activities that incorporate gamification and digital technology, including AI-based platforms, show potential to increase community engagement, although challenges related to digital literacy and gender-based access gaps in rural areas remain.

These findings reinforce the view that the KAP model cannot be understood as a linear process but rather as one shaped by interactions among various factors. This is in line with the Communication for Development (C4D) approach, which emphasises the importance of community-based participatory communication in driving sustainable behaviour change. Furthermore, from the perspective of Social Network Theory, informal communication networks such as Posyandu and WhatsApp groups play an important role as mediums in the dissemination of information and the formation of social norms.

Furthermore, integrating KAP with the approaches of Social Marketing and Behavioural Economics (Nudge Theory) shows that behaviour change can be reinforced through a combination of the right message, a supportive social context, and subtle yet consistent behavioural nudges. Meanwhile, in the digital context, these findings are also relevant to the Technology Acceptance Model (TAM) and the Digital Divide Theory, which explain that the success of technology adoption depends heavily on perceived benefits, ease of use, and the gap in access and digital literacy. Thus, this research shows that stunting prevention is a multidimensional process in which behavioural change is determined not only by knowledge but also by interactions among communication, gender relations, social networks, and technological factors. The integration of these approaches makes a new contribution to understanding health communication as a complex, contextual social process.

## 4. Conclusion

These findings highlight the importance of gender-responsive communication strategies for stunting prevention. Effective health communication should move beyond mother-centred messaging and promote shared responsibility between women and men in family nutrition decisions. Integrating community-based communication networks with digital innovations, such as AI-assisted health information systems, may strengthen the reach and impact of nutrition campaigns. Policymakers and public health practitioners should therefore adopt gender-sensitive social marketing frameworks that leverage local communication practices while addressing structural barriers in digital access and health literacy. Such approaches can contribute to more inclusive and sustainable stunting prevention efforts in rural communities.

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