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From Passive Listeners to Active Learners: How a WhatsApp Group Transformed Mothers' Feeding Practices in Rural Indonesia

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ABSTRACT

Despite relatively high baseline nutrition knowledge among mothers in rural Indonesia, optimal infant and young child feeding (IYCF) practices remain inconsistent a persistent "knowledge–practice gap." This convergent mixed-methods study explores how a moderated WhatsApp-based digital community transformed maternal learning behavior and feeding practices in Sukaharja Village, Bogor. A baseline survey with 40 mothers revealed strong foundational knowledge (mean IYCF score = 76.25), yet suboptimal adherence to advanced complementary feeding practices: only 65% provided age-appropriate food textures for 10–12-month-olds, and just 61% recognized the importance of regular posyandu visits for early growth faltering detection. In response, a 6-month WhatsApp intervention was implemented, co-moderated by local posyandu cadres and a nutritionist, delivering weekly videos, infographics, and culturally relevant recipes (e.g., nasi telur wortel, bubur daun kelor). Post-intervention, in-depth interviews (n=7), participant observation, and thematic analysis of group interactions revealed a shift from passive reception to active engagement: mothers reported increased psychological safety to ask questions, greater confidence in preparing homemade meals, and higher posyandu attendance. Cadres and the local PKK chairperson confirmed enhanced peer support and service linkage. Findings indicate that the WhatsApp group functioned not as a knowledge-transfer tool, but as a social infrastructure that activated existing knowledge through peer modeling, timely reminders, and trusted moderation effectively transforming passive listeners into active learners and caregivers.

Keywords: Complementary Feeding, Digital Community, Andragogy, Stunting Prevention, Social Media.

INTRODUCTION

Childhood stunting remains a critical public health challenge in Indonesia, with a national prevalence of 21.6% in 2022 (Kementerian Kesehatan RI, 2022). While multifactorial, suboptimal infant and young child feeding (IYCF) practices during the first 1,000 days are key immediate determinants (de Onis & Branca, 2016). In rural settings like Sukaharja Village, Bogor, mothers often possess adequate nutrition knowledge yet struggle to translate it into consistent practice a

phenomenon known as the "knowledge–practice gap" (Gizaw et al., 2023; Starkweather et al., 2020).

Traditional health education at posyandu (integrated health posts) typically relies on one-way lectures, which may discourage participation due to social discomfort or fear of judgment (Aston et al., 2018). In contrast, digital platforms like WhatsApp offer private, interactive spaces for peer-supported learning. With near-universal smartphone access in Indonesia, WhatsApp is uniquely positioned to bridge communication gaps in maternal health (Patel et al., 2018; Trude et al., 2021).

This study investigates how a cadre-moderated WhatsApp group reshaped maternal learning behavior not by increasing knowledge, but by creating a psychologically safe environment for inquiry, modeling, and mutual support. Guided by the question "How does participation in a digital peer-support group influence mothers' feeding practices and engagement with health services?", we document a transformation from passive listeners to active caregivers in a high-knowledge.

RESEARCH METHODS

This single-arm, qualitative study was conducted in Sukaharja Village, Bogor, from May to October 2025. The design integrated quantitative baseline assessment with qualitative exploration of behavioral change.

First, a cross-sectional survey assessed IYCF knowledge and practices among 40 mothers using a 100-point scale and binary indicators (e.g., age of MP-ASI initiation, food texture progression, posyandu attendance). Descriptive statistics summarized baseline conditions.

Subsequently, a 6-month WhatsApp intervention was launched. The group was co-moderated by trained posyandu cadres (posting schedules, growth monitoring reminders) and a nutritionist (sharing weekly videos, flyers, and recipes like nasi telur wortel). Content emphasized practical, visual, and culturally familiar guidance.

Post-intervention, semi-structured interviews were conducted with 7 mothers with snowball sampling. Questions focused on changes in confidence, information-seeking behavior, and

posyandu engagement. Interviews were complemented by participant observation and six months of chat log analysis. Thematic analysis followed an inductive approach, with triangulation from cadres, the PKK chairperson, and observational notes to enhance credibility.

No new themes emerged after the 7th interview, indicating thematic saturation. Due to the strong convergence of responses across participants, we present two representative cases: a 42-year-old mother of an 11-month-old (Case 1) and a 47-year-old mother of a 7-month-old (Case 2). These two participants were selected because their narratives clearly and comprehensively reflect the shared experiences of the broader group, including increased comfort in seeking information digitally, improved confidence in feeding practices, and enhanced engagement with posyandu services.

Interviews were conducted in person at the posyandu and supplemented by brief follow-up calls. Due to the busy, communal setting, audio recording was not used; instead, the researcher took detailed handwritten notes during and immediately after each interview, later transcribed into structured digital summaries.

To enhance the credibility and validity of our findings, triangulation was employed using multiple data sources: (1) quantitative behaviour indicators, (2) mothers' interview narratives, (3) key informant feedback from a posyandu kader and the local Family Welfare Empowerment (PKK) chairperson, and (4) six months of observational notes from the WhatsApp group(Shenton, 2004). In this study, we used the COREQ checklist for conducting and reporting qualitative research (Tong et al., 2007).

All qualitative interpretations were discussed with the senior author, and member checking was conducted during follow-up interactions to validate quotes particularly those containing local Sundanese terms or culturally specific expressions.

RESULTS AND DISCUSSION

Results

Baseline data confirmed high knowledge (mean = 76.25) but inconsistent practices: while 97.5% initiated complementary feeding at 6 months, only 65% provided age-appropriate textures for older infants, and 61% recognized posyandu's role in early growth faltering detection.

Table 1. Caregivers' infant and young child feeding knowledge and practices

Indicators	Survey		
	na	Nb	Percentage (%)
Complementary Feeding Knowledge			
Caregivers knowing the rationale for introducing complementary feeding	38	40	95%
Caregivers knowing the appropriate age to start complementary feeding (6 months)	39	40	97.5%
Caregivers knowing the types of complementary foods suitable for 6-month-old infants (pureed/mashed)	38	40	95%
Caregivers knowing the key nutrients required in complementary foods	31	40	77.5%
Complementary Feeding Practices			
Providing complementary foods with recommended frequency for infants aged 6–8 months	32	40	80%
Offering age-appropriate food textures for children aged 10–12 months	26	40	65%
Practicing gradual introduction of new foods to infants	25	40	62.5%
Awareness of and Engagement with Posyandu for Growth Monitoring			
Recognizing the importance of attending posyandu to detect early signs of growth faltering (e.g., stunting)	24	40	61%

[a] Number of caregivers who responded positively on the knowledge/practices.
[b] Total number of mothers eligible for the question.

The WhatsApp intervention catalyzed a behavioral shift. Mothers described the group as a "safe space" where they could ask sensitive questions without shame something they avoided in public posyandu sessions. As one mother shared: *"I never ask at posyandu because there are too many people… but in WA, I can ask quietly."*

Practical video demonstrations (e.g., cooking bubur daun kelor) were highly valued. Mothers reported trying recipes at home, stating: *"Now I know what to cook—I just follow the videos."* This led to a shift from instant porridge to homemade meals.

Crucially, digital discussions motivated increased posyandu attendance. Mothers received timely reminders and felt more prepared for visits. A posyandu kader observed: *"Maternal participation has noticeably increased since the WhatsApp group started."*

This study demonstrates that in contexts of high baseline knowledge, the barrier to optimal feeding is not information but social and psychological safety. The WhatsApp group addressed this by enabling private, asynchronous, and peer-supported learning. Unlike traditional lectures, it fostered agency, modeling, and mutual care.

These findings align with Patel et al. (2018), who found moderated WhatsApp groups improved maternal confidence in Kenya, and Trude et al. (2021), who reported enhanced social cohesion among Brazilian mothers(Patel et al., 2018; Trude et al., 2021). However, our study extends this literature by showing that digital communities are especially transformative when knowledge is already sufficient but underutilized.

The co-management model leveraging trusted cadres as moderators ensured cultural relevance and sustainability. This aligns with Patil et al. (2022), who emphasized community health workers as key enablers of digital health equity(Patil et al., 2022).

Limitations include the lack of a control group and reliance on self-reported behavior. Future research should measure anthropometric outcomes and test scalability across diverse settings.

Discussion

This study demonstrates that in a rural Indonesian setting where maternal knowledge of infant and young child feeding (IYCF) is already relatively high, a moderated WhatsApp-based digital community can effectively bridge the persistent knowledge–practice gap not by delivering new information, but by fostering psychological safety, peer support, and behavioral reinforcement.

Our findings align with global evidence that digital peer-support platforms enhance maternal engagement. Patel et al. found that moderated WhatsApp groups in Kenya improved maternal confidence and health-seeking behavior (Patel et al., 2018),particularly when content was practical and culturally relevant mirroring our participants' preference for video-based MP-ASI recipes (e.g., nasi telur wortel, bubur daun kelor). Similarly, Research in Brazil reported that WhatsApp strengthened social cohesion and reduced isolation among new mothers, a dynamic echoed in our participants' statements: "We feel closer now because we can greet each other in the group(Trude et al., 2021).

Critically, our study extends this literature by showing that digital interventions are especially valuable in contexts of high baseline knowledge a nuance often overlooked. As Starkweather et al. (2020) noted in rural Indonesia, nutrition campaigns can significantly improve knowledge ($p < 0.0001$) yet yield minimal behavior change(Starkweather et al., 2020). Our results explain why: knowledge alone cannot overcome social barriers like discomfort asking questions in public ("Di posyandu tidak pernah bertanya, soalnya banyak orang"). The WhatsApp group provided a low-pressure alternative, enabling mothers to seek advice on both nutrition and immunization topics they avoided in face-to-face settings.

The co-management model with posyandu cadres as moderators and researchers as content providers proved essential for feasibility and sustainability. Cadres posted weekly schedules and responded to questions, embedding the digital group within existing community structures. This aligns with Patil et al. (2022), who emphasized that leveraging local health workers increases trust and scalability in digital health programs (Patil et al., 2022). Notably, cadres themselves confirmed

increased posyandu attendance, validating mothers' self-reports and strengthening causal inference.

However, several limitations warrant caution. First, this was a single-arm feasibility study without a control group, limiting causal claims. Second, qualitative data were collected only post-intervention, relying on retrospective accounts though triangulation with cadres and chat logs enhanced credibility. Third, the sample was homogeneous (all housewives in one village), affecting generalizability. Future studies should test this model in diverse settings and measure impact on child anthropometry (e.g., height-for-age Z-scores) over time.

Despite these limitations, our findings offer actionable insights into policy. The Indonesian Ministry of Health's Posyandu Revitalization strategy could integrate cadre-moderated WhatsApp groups as a low-cost tool to enhance IYCF practices and service linkage. Training cadres in digital facilitation and content curation as done in this study would require minimal resources but could yield significant gains in maternal engagement and stunting prevention.

In conclusion, WhatsApp is not merely a knowledge-delivery channel, but a social infrastructure that enables trust, modeling, and mutual support. In communities where mothers already know what to do but struggle with how or when to act, such platforms can be transformative.

CONCLUSION

A cadre-moderated WhatsApp group transformed maternal learning behavior in rural Indonesia not by delivering new knowledge, but by activating existing knowledge through trust, peer support, and practical modeling. By providing a low-barrier space for inquiry and action, it turned passive listeners into confident, active caregivers. For stunting prevention programs, integrating such digital communities into existing posyandu systems offers a feasible, scalable, and culturally resonant strategy to bridge the knowledge–practice gap.

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