



Critical Review Article

Behavioral Change Communication and Vaccine Acceptance: A Framework for Strengthening Public Trust in Health Interventions

Yenny Budiman Makahaghi

Nursing Study Program, North Nusa State Polytechnic, Indonesia

Correspondence author: yb.makahaghi@gmail.com

Abstract

Vaccine hesitancy remains a global challenge that threatens public health achievements, particularly in the post-pandemic era. Beyond scientific efficacy, vaccine acceptance is largely determined by how health messages are communicated, perceived, and trusted. Behavioral Change Communication (BCC) provides a framework that integrates psychological, social, and cultural factors to encourage informed and voluntary participation in vaccination programs. This study aims to examine the conceptual role of BCC in promoting vaccine acceptance and rebuilding public trust in health interventions, focusing on its application within the Indonesian context. A qualitative conceptual analysis was conducted using literature published between 2019 and 2025. The study synthesized theoretical models such as the Health Belief Model (HBM) and the Social Ecological Model (SEM), along with national and international reports on vaccine communication and public behavior. The findings highlight that empathetic, transparent, and participatory communication strategies are key to overcoming misinformation and strengthening public trust. BCC operates through four dimensions: message design, media selection, community participation, and behavioral reinforcement, each contributing to sustained vaccine confidence. Digital communication platforms further expand outreach but require ethical regulation to prevent misinformation. BCC should be institutionalized as a core strategy in vaccination programs and public health policy. By fostering dialogue, empathy, and community engagement, health systems can transform communication from one-way persuasion into genuine partnership, leading to improved vaccine acceptance and collective health resilience.

Keywords: behavioral change communication; vaccine acceptance; public trust; health communication; community engagement

1. Introduction

Public trust is the lifeblood of any successful health intervention. Whether in vaccination programs, disease prevention campaigns, or behavioral health promotion, the willingness of individuals and communities to act upon health messages depends on how effectively those messages are communicated and understood. The COVID-19 pandemic has exposed the fragility of this trust, revealing that the mere availability of medical interventions does not guarantee public acceptance [1], [2]. Instead, it is the communication of health risks and benefits embedded within social, cultural, and psychological contexts that determines whether individuals choose to comply or resist.

Behavioral Change Communication (BCC) has emerged as one of the most powerful frameworks for bridging the gap between scientific evidence and human behavior. Rooted in

psychology, sociology, and communication science, BCC emphasizes dialogue rather than persuasion. It operates on the principle that lasting behavioral changes occur when individuals are informed, motivated, and empowered to make health decisions aligned with their own values and experiences. Within vaccination programs, BCC seeks not only to increase coverage rates but also to build resilience against misinformation, fear, and mistrust that often accompany large-scale immunization efforts [3], [4].

In Indonesia, the challenge of vaccine hesitancy has highlighted the critical role of behavioral communication. Despite nationwide efforts to distribute COVID-19 vaccines, early uptake was uneven across regions especially in rural and island communities due to misinformation, cultural misconceptions, and low perceived risk. Studies conducted during the pandemic (Surudani et al., 2022; Makahaghi et al., 2023) showed that while logistical issues were gradually resolved, psychological and communicative barriers remained persistent [5]. People who doubted vaccine safety were often influenced by social narratives rather than scientific facts. This suggests that communication strategies focusing solely on information dissemination are insufficient; effective public health communication must also engage emotion, social trust, and cultural identity [6].

BCC offers a structured pathway to address these multidimensional barriers. It integrates four key components knowledge enhancement, emotional engagement, community participation, and reinforcement mechanisms that together encourage voluntary, sustainable behavior change. Rather than imposing top-down messages, BCC promotes participatory dialogue, where communities become active partners in defining problems and solutions [7]. In the context of vaccine acceptance, this means involving local leaders, health volunteers, and families in co-creating messages that resonate with community norms. When individuals feel their voices are heard and their concerns respected, their willingness to act increases [8].

Furthermore, behavioral change communication aligns closely with modern theories of risk communication and health belief models. According to these frameworks, individual decisions are influenced by perceived susceptibility, perceived severity, perceived benefits, and perceived barriers [9]. BCC strengthens these perceptions through narrative storytelling, role modeling, and culturally tailored campaigns. For example, instead of relying solely on data about vaccine efficacy, a midwife or community health worker may share relatable stories of neighbors who safely received the vaccine, creating social proof and emotional reassurance. This blend of rational and affective messaging is essential for transforming intention into action [10].

At the same time, the digital era presents both challenges and opportunities for implementing BCC. The rapid spread of misinformation through social media has amplified skepticism toward health authorities, but it has also created new avenues for engagement. Digital BCC through WhatsApp groups, local influencer collaborations, and interactive online education can extend the reach of health messages to younger and geographically isolated populations. However, digital communication must preserve credibility and empathy to prevent depersonalization of public health dialogue [11].

The significance of developing a robust BCC framework extends beyond vaccine programs. It offers a scalable model for other public health initiatives, including maternal health, nutrition, and chronic disease prevention. In these areas, behavioral change is often more decisive than medical innovation. Thus, understanding how communication shapes perception, trust, and motivation become a cornerstone of sustainable health promotion [12].

This paper explores how Behavioral Change Communication can strengthen vaccine acceptance and rebuild public trust in health interventions. By synthesizing theoretical insights and lessons from community-based experiences in Indonesia, the study highlights how communication when designed as a participatory, empathetic, and culturally grounded process can transform skepticism into cooperation. The discussion aims to provide a conceptual framework for policymakers, educators, and healthcare workers seeking to design trust-centered health campaigns that not only inform but also inspire behavioral transformation.



2. Methodology and Implementation Strategy

This study adopts a qualitative descriptive and conceptual analysis approach, aimed at synthesizing theories and practices of Behavioral Change Communication (BCC) in relation to vaccine acceptance and public trust in health interventions. Rather than relying on primary survey data, the study builds upon a structured literature review and theoretical integration, enabling a contextual understanding of communication as a behavioral and social process [13], [14].

2.1 Research Design

The research design follows a narrative review framework, which allows for the exploration of BCC concepts, their components, and their applicability in real-world public health initiatives. The narrative approach was chosen because it emphasizes interpretation and conceptual linkage rather than quantitative measurement. This design is particularly appropriate for examining the dynamic relationship between communication, behavior, and trust across different social contexts [7].

2.2 Data Sources

The data in this study were derived exclusively from secondary sources, including peer-reviewed journal articles, policy documents, and official guidelines published between 2019 and 2025. These materials were identified through searches in PubMed, Scopus, and Google Scholar using key terms such as “behavioral change communication,” “vaccine hesitancy,” “public trust,” and “health communication strategies.” In addition, relevant Indonesian references such as national reports from the Ministry of Health, studies by Makahaghi et al. (2022–2023), and WHO/UNICEF behavioral insights reports were included to ensure contextual accuracy within the Indonesian public health system.

2.3 Analytical Framework

The analysis was guided by the Behavioral Change Communication (BCC) model and supported by two complementary theoretical frameworks [15], [16]:

- The Health Belief Model (HBM) which explains how perceptions of risk, benefits, and barriers influence vaccination decisions.
- The Social Ecological Model (SEM) which highlights how individual behavior is shaped by interpersonal, community, and policy-level factors.

These frameworks were used to identify recurring themes and causal linkages between communication strategies and behavioral outcomes. The analysis involved three steps:

- (1) Concept Identification mapping key constructs such as message clarity, cultural resonance, and emotional engagement.
- (2) Comparative Synthesis evaluating how BCC strategies have been applied in various public health campaigns; and
- (3) Framework Development constructing a conceptual model that integrates BCC with trust-building mechanisms in health communication.

2.4 Validation and Credibility

Credibility of findings was established through triangulation of multiple literature sources and comparison of theoretical insights across different disciplines public health, psychology, and communication studies. Preference was given to peer-reviewed works and recent data to ensure validity and relevance. Analytical rigor was maintained by systematically coding themes and aligning them with the conceptual dimensions of BCC [17].



3. Results and Discussion

3.1 Behavioral Change Communication in Public Health Context

Behavioral Change Communication (BCC) operates as both a science and an art within public health. It integrates psychology, sociology, and communication studies to modify or reinforce health-related behaviors. In the context of vaccination, BCC focuses on addressing not only informational deficits but also the emotional, cultural, and trust-related factors that determine whether individuals accept or reject vaccines.

Findings from the reviewed literature reveal that the most effective BCC interventions share several features: audience-centered design, participatory message development, and a sustained dialogue rather than one-way transmission. For example, studies by Mulyadi et al. (2022) and Kaushik et al. (2025) emphasize that community-based education particularly through social and digital media can significantly improve vaccine literacy and counter misinformation. Such communication must, however, go beyond technical explanation; it must resonate with people lived experiences and values [18].

3.2 Vaccine Hesitancy and Trust Dynamics

Vaccine hesitancy is not solely a product of misinformation but of trust asymmetry a gap between what communities expect from health authorities and what they experience. Public trust is shaped by perceived competence, transparency, and empathy of health actors. The Indonesian experience, particularly during the COVID-19 and BIAN (Bulan Imunisasi Anak Nasional) campaigns (Kemenkes, 2022), demonstrates that a lack of trust may persist even when vaccines are accessible and free [19].

This study's synthesis indicates that trust-building communication relies on three essential processes [20]:

- Transparency sharing both benefits and limitations of vaccines.
- Empathy demonstrated genuine care through local health workers' narratives; and
- Consistency maintaining a coherent message across multiple media platforms.

For instance, WHO (2023) identifies that community trust in vaccination improves when local leaders religious or traditional are included in campaign planning. This reflects the principle that trust is socially constructed, not merely informational.

3.3 Core Elements of an Effective BCC Framework

The integrated framework developed from this review identifies four interdependent pillars for effective BCC implementation in vaccine programs [21], [22], [23]:

- Message Design and Framing

Communication must be culturally attuned, using metaphors, visuals, and testimonials familiar to the community. Messages emphasizing protection of family and community welfare are more persuasive than those emphasizing individual duty.

- Medium and Channel Strategy

Traditional media (radio, print) remains vital in rural areas, while social media has become dominant in urban communication. The hybrid use of digital storytelling, WhatsApp community groups, and micro-influencers enables sustained dialogue and emotional engagement.

- Community Engagement and Co-creation

BCC thrives when communities are not passive recipients but active collaborators. Participatory health forums, local advocacy groups, and peer educators can bridge the gap between official messages and grassroots realities. Mulyadi et al. (2022) demonstrate that social-media-based education combined with community meetings can elevate vaccine coverage more effectively than top-down campaigns.

- Feedback and Adaptation Mechanisms



Behavioral communication is dynamic. Continuous monitoring through social listening tools or community feedback sessions allows health communicators to adjust strategies in real time, ensuring relevance and credibility.

3.4 Integrating Behavioral Theories into Practice

The Health Belief Model (HBM) provides a cognitive structure for understanding why people decide to vaccinate. It suggests that perceived susceptibility, perceived severity, perceived benefits, and perceived barriers collectively determine behavioral intention [24]. BCC interventions can leverage this by framing messages that increase the perceived benefits (protection, community safety) and reduce perceived barriers (fear of side effects or religious doubts) [25].

Meanwhile, the Social Ecological Model (SEM) situates behavior within multiple layers individual, interpersonal, community, and policy levels. This implies that communication must occur across multiple interfaces: individual counseling, family influence, religious discourse, and media narratives. The synergy between these levels explains why single-channel interventions often fail to shift deep-seated beliefs [26].

3.5 The Role of Health Workers as Behavioral Communicators

Health workers, especially midwives and community nurses play a pivotal role as trusted communicators. They embody the intersection between technical expertise and human connection. As highlighted by Widiastutik (2023) in the context of midwifery communication, effective communication depends on empathy, clarity, and mutual understanding between communicator and patient [27].

In vaccine communication, these same principles apply health workers must translate scientific knowledge into accessible language and listen actively to community concerns. Training programs focusing on interpersonal communication skills can therefore serve as a behavioral intervention in themselves [28], [29].

3.6 Digital Transformation and Modern BCC

The digitalization of health promotion has revolutionized the practice of BCC. The integration of social media analytics, chatbot counseling, and digital dashboards has allowed public health agencies to track sentiment and misinformation in real time. According to Sidabutar (2024), the rise of digital health promotion since the 2020s enables a two-way interaction between citizens and health authorities [30].

However, digital platforms also present new challenges: echo chambers, algorithmic amplification of rumors, and data privacy issues. Hence, while digital tools enhance reach, they require ethical and technical governance frameworks [31].

3.7 Toward a Conceptual Framework

Synthesizing the insights from theory and practice, this study proposes a BCC–Trust Framework for Vaccine Acceptance composed of the following sequential stages:

- Perception Shaping: Delivering accurate and emotionally resonant messages that increase perceived benefits and reduce perceived barriers.
- Engagement: Involving community leaders and peer groups in co-producing vaccine messages.
- Trust Building: Ensuring transparency, empathy, and consistency in all communication.
- Behavior Reinforcement: Sustaining vaccine-positive behavior through social recognition, reminders, and visible community endorsement.

The model underscores feedback as a continuous loop, allowing the system to adapt to evolving behavioral and social contexts.



3.8 Discussion and Implications

This conceptual integration suggests that communication should no longer be viewed merely as an output of health policy but as a structural determinant of health outcomes. Trust, once broken, cannot be restored by information alone; it requires moral credibility and relational continuity [32].

In practical terms, governments and health agencies must institutionalize BCC as part of policy architecture allocating dedicated resources, capacity building, and performance indicators. Academic institutions should integrate BCC into public health curricula, emphasizing interdisciplinary learning that combines behavioral science, communication strategy, and digital literacy [33].

For future research, empirical validation of this framework is essential. Mixed-method studies that evaluate community trust trajectories, pre- and post-BCC interventions, can provide evidence for its scalability. Furthermore, contextual adaptation particularly in multicultural and multi-religious settings such as Indonesia should be prioritized to ensure local resonance.

4. Conclusion and Recommendations

Behavioral Change Communication (BCC) represents a crucial paradigm shift in the way health systems approach vaccine promotion and other public health interventions. Rather than focusing solely on information dissemination, BCC integrates cognitive, emotional, and social dimensions of human behavior. This conceptual study affirms that communication, when designed as an empathetic and participatory process, can significantly enhance vaccine acceptance and strengthen public trust. The synthesis of theories particularly the Health Belief Model and the Social Ecological Model illustrates that individuals make vaccination decisions not in isolation, but within webs of family, community, and cultural narratives. Trust, therefore, emerges not from persuasion but from shared understanding and transparent dialogue. Health workers, especially those embedded in communities such as midwives and nurses, serve as pivotal communicators who translate science into relatable stories. Furthermore, the digital transformation of public health offers both opportunity and risk. While online platforms expand outreach and accessibility, they also demand careful management of misinformation and ethical data practices. The essence of BCC remains unchanged: to engage minds and hearts through truthful, empathetic, and consistent communication. Ultimately, vaccine acceptance is not simply a product of education but of relationship. When people feel respected, heard, and included, they are more likely to participate in collective health action. BCC, therefore, should be institutionalized as a core competency in health policy, training, and service delivery.

To achieve this transformation, several strategies are recommended. National and regional health authorities should embed BCC principles into all vaccination and preventive health programs, ensuring that communication is continuous, inclusive, and responsive to community feedback. Continuous capacity building is necessary for health professionals, emphasizing interpersonal communication, cultural sensitivity, and digital literacy to enhance trust-based care. Community empowerment must also become a priority: local leaders, educators, and youth organizations should be engaged as co-creators of health messages that reflect shared cultural values and counter misinformation. Finally, digital innovation should be leveraged to build storytelling-based campaigns and interactive health communication platforms, supported by ethical and inclusive digital governance. By embracing BCC as a foundational approach, Indonesia and similar nations can transform health communication from mere persuasion into genuine partnership—nurturing a culture of informed, trusted, and empowered public participation in achieving better health outcomes.

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