

# SOCIAL MOVEMENT FOR HEALTH: AN INNOVATIVE MODEL OF COMMUNITY SERVICE IN THE DIGITAL AGE

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## Abstract

*This article analyzes how digital transformation reshapes social movements for health in Indonesia by introducing innovative community engagement models supported by online platforms and participatory technologies. Using a mixed-method approach that integrates conceptual analysis with secondary data from digital adoption surveys and public health reports, the study identifies key digital mechanisms including micro-campaigns, digital volunteerism networks, telehealth collaborations, crowdfunding ecosystems, and digital health literacy programs. These models expand community participation, accelerate information dissemination, and enhance public responsiveness during health crises. The findings also highlight structural challenges, including inequitable digital access, misinformation, sustainability gaps, and limited institutional coordination. To address these constraints, the article proposes a strategic framework emphasizing inclusive digital infrastructure, strengthened health literacy, multi-stakeholder collaboration, ethical data governance, and continuous research-based innovation. Overall, the study contributes a comprehensive understanding of how digital ecosystems can support sustainable, citizen-driven health engagement and improve public health outcomes in the digital era.*

**Keywords** : community engagement, digital health, Indonesia, public health, social movements.

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## 1. Introduction

Social movements for health have gained renewed prominence in the digital era as communities mobilize through online platforms, digital networks, and participatory technologies to address public health challenges. Historically, community-based health promotion relied on face-to-face mobilization, grassroots activism, and localized engagement. However, the rapid expansion of digital connectivity has transformed how citizens access information, organize collective action, and participate in public health initiatives. Globally, social movements for health now emerge in hybrid formats that combine physical participation with digital communication, allowing actors to mobilize at scale and across geographic boundaries. Digital health activism has expanded dramatically since the COVID-19 pandemic, during which more than 4.2 billion people worldwide relied on social media and online platforms as primary health communication channels, indicating a structural shift in how communities obtain health information and engage in collective decision-making (Melhem et al., 2023). These trends illustrate that digital infrastructures have become central to modern health movements, shaping the ways citizens contribute to public health improvement.

In Indonesia, digital engagement has become increasingly embedded in community health initiatives. With over 210 million internet users in 2023 and social media penetration exceeding 77 percent of the population, Indonesia is one of the world's most digitally active societies (APJII, 2023). This digital expansion has influenced how communities address



health issues such as maternal health, infectious diseases, mental health, nutritional challenges, and environmental health risks. For example, digital-based social movements such as “Gerakan 1000 Hari Pertama Kehidupan,” community mental health awareness campaigns, and vaccination advocacy movements have gained national visibility through platforms like Instagram, TikTok, and WhatsApp. These channels enable rapid dissemination of health knowledge, mobilization of volunteers, and coordination of community-based health interventions. As a result, community engagement in Indonesia increasingly involves hybrid models that blend virtual coordination with offline service delivery, demonstrating the potential for digital innovation to strengthen public health outcomes.

The digitalization of social movements for health has implications for the effectiveness, inclusiveness, and sustainability of community engagement. Digital platforms support real-time communication, allowing communities to respond quickly to public health emergencies, share localized risk information, and coordinate mutual aid. During the pandemic, digital community groups facilitated donation drives, telehealth coordination, neighborhood-level surveillance, and health literacy campaigns across Indonesia. Studies show that digital engagement significantly increased health information access among urban and rural populations by reducing communication barriers and enhancing community responsiveness to public health measures (Aryaningtyas & Risyanti, 2024). Digital tools also empower marginalized groups by providing alternative platforms for expression and participation, allowing youth, women, and individuals with limited mobility to contribute to health initiatives. These developments highlight the transformative potential of digital technologies in expanding civic participation and democratizing access to health resources.

Despite these advantages, the integration of digital tools into community health engagement presents new challenges. Digital divide issues persist in Indonesia, with disparities in connectivity, digital literacy, and device accessibility affecting participation among low-income and rural populations. Although internet penetration is high, the quality and stability of digital access vary significantly across regions, influencing the effectiveness of digital health movements. Furthermore, misinformation poses a critical threat to digital health engagement. WHO reported that during the pandemic, false health information spread faster on digital platforms than verified health data, undermining public health interventions and reducing community trust (WHO, 2021). In Indonesia, misinformation contributed to vaccine hesitancy and confusion over health protocols, demonstrating the fragility of digital engagement ecosystems. These dynamics indicate that while digital platforms enhance health mobilization, they also require robust governance and literacy frameworks to function effectively.

Another emerging challenge involves sustainability and institutional integration. Many digital health movements in Indonesia rely on volunteer-driven initiatives or short-term campaigns, lacking long-term organizational structures. While digital platforms can generate large-scale participation, sustaining engagement beyond crisis periods remains difficult. Without institutional support, digital health movements may struggle to maintain momentum, secure funding, or integrate their initiatives into formal health governance systems. A gap often exists between grassroots digital mobilization and government health programs, which limits opportunities for scaling successful community-led initiatives. Strengthening coordination between public health institutions, civil society organizations, and digital communities is therefore crucial for enhancing long-term public health outcomes.

Academic research on digital-era health social movements is expanding, yet several gaps remain. Previous studies such as Yi et al., analysis of Southeast Asian digital health activism (2021) explored the communication strategies of health campaigns but did not examine community service integration or on-the-ground engagement models. Meanwhile, Andriyan et al., (2025) evaluated the role of social media in health literacy improvement but did not analyze how digital networks drive collective health action. Another study by Wirawan et al. (2022) focused on digital mental health communities but overlooked the broader structural dynamics of hybrid digital-physical health service models. These studies



collectively point to a need for deeper examination of how digital infrastructures reshape community service mechanisms and generate new models of health-oriented social engagement. The evolution of health movements in the digital era requires more comprehensive frameworks that connect digital participation, community mobilization, and public health service innovation.

This article offers novelty by proposing an integrated conceptual model of digital-era community engagement for health, emphasizing how online platforms, digital networks, and hybrid service mechanisms redefine the nature of social movements for health in Indonesia. Unlike previous research that focused primarily on health communication, this study expands the lens to understand how digital infrastructures influence collective action, community resilience, service delivery, and innovation in public health engagement. Through a mixed-method approach that synthesizes literature and secondary data, this study identifies structural factors that shape digital community health movements and highlights innovative digital service models emerging in Indonesia. The purpose of this research is to analyze the transformative impact of digital environments on social movements for health, identify structural challenges and opportunities, and propose a framework for innovative community engagement that supports sustainable public health outcomes in the digital era.

## 2. Method

This study uses a mixed-method approach that integrates conceptual analysis with secondary data synthesis to examine how digital-era social movements reshape community engagement for health in Indonesia. The conceptual component draws on theories of social movements, digital participation, community empowerment, and public health communication to develop an analytical framework explaining how digital infrastructures influence collective health action. Scholarly literature published between 2018 and 2024 was reviewed through Google Scholar, Scopus, and PubMed using keywords such as digital social movements, community health engagement, online activism, and Indonesia public health. Articles were selected based on relevance, theoretical contributions, and methodological rigor (Yi et al., 2024).

The second methodological component involves the use of secondary data from Indonesian digital adoption surveys, health behavior reports, and digital platform usage statistics issued by organizations such as APJII, WHO, UNICEF, and Indonesia's Ministry of Health. These datasets provide quantitative indicators of digital engagement, internet penetration, health literacy trends, and community participation patterns. The integration of these datasets supports the analysis of how digital tools influence health behavior, participation scale, and community mobilization (APJII, 2023).

Triangulation is applied to strengthen validity by connecting theoretical insights, empirical evidence, and contextual realities. Through triangulation, the study identifies gaps between digital engagement potential and practical implementation challenges, enabling a comprehensive understanding of emerging models of digital community service. This approach ensures that conceptual interpretations remain grounded in real-world data and reflect Indonesia's socio-cultural and technological landscape (Aryaningtyas & Risyanti, 2024).

## 3. Results and Discussion

### Digital Transformation and the Evolution of Social Movements for Health

Digital transformation has redefined the nature of social movements for health by enabling communities to mobilize in new ways, transcending geographic boundaries and social structures that traditionally limited civic engagement. The rapid proliferation of internet access and mobile technology has altered how individuals communicate, organize, and share health information. Before the digital era, health movements relied heavily on physical meetings, community gatherings, and grassroots organizing. These approaches were effective but often constrained by limited reach and slow information dissemination. In



contrast, digital platforms offer real-time communication and mass connectivity, allowing social movements to expand their influence and coordinate health initiatives at unprecedented scales. Research demonstrates that digital platforms enhance the speed and scale of health mobilization by facilitating immediate information exchange and collective problem-solving (Melhem et al., 2023). This shift signifies the emergence of digital health communities capable of responding to crises more efficiently than traditional systems.

In Indonesia, where digital penetration is among the highest in Southeast Asia, the relationship between technology and health activism has grown increasingly intertwined. More than 210 million Indonesians are active internet users, and over 170 million use social media daily, making digital platforms central to public discourse (APJII, 2023). These numbers highlight the expanding digital environment in which social movements for health operate. Health-related social engagement often begins online through awareness campaigns, community fundraising, volunteer recruitment, and information exchange. Movements such as digital breastfeeding support groups, mental health communities, and chronic illness support networks demonstrate how Indonesians use digital spaces to share experiences, advocate for policy changes, and coordinate community action. This aligns with evidence showing that digital movements strengthen social solidarity and democratize access to health knowledge across socio-economic groups (Andriyan et al., 2025).

Digital platforms also enable health movements to diversify their communication strategies. Unlike traditional health campaigns that rely on printed materials or in-person outreach, digital movements use multimedia content such as short videos, infographics, live-stream sessions, and interactive Q&A formats to engage citizens. These formats increase communication effectiveness because they simplify complex health information into relatable, easy-to-understand narratives. Studies show that multimedia health content increases engagement levels, enhances information retention, and expands participation across younger demographics (Yi et al., 2024). In Indonesia, platforms like TikTok, YouTube, and Instagram have become major channels for citizen-led health campaigns targeting issues such as nutrition, mental health, reproductive health, cancer awareness, and infectious disease prevention.

Another major development is the emergence of hybrid engagement models that combine digital coordination with physical action. During COVID-19, Indonesian digital communities mobilized thousands of volunteers for distribution of masks, food aid, and medicines through WhatsApp groups and Instagram campaigns. These hybrid models maintain the strengths of traditional community engagement while harnessing digital technologies for improved efficiency. According to Aryaningtyas & Risyanti (2024), hybrid digital-physical engagement significantly increased community responsiveness during the pandemic by enabling rapid needs assessment and coordinated action. This demonstrates that digital technologies do not replace physical mobilization but augment it, allowing communities to operate more adaptively and collaboratively during public health emergencies.

Digital transformation has also promoted new forms of leadership in health social movements. In the pre-digital era, leadership emerged through formal structures such as community organizations or NGOs. Today, leadership can emerge informally through influencers, digital volunteers, and “micro-leaders” who have credibility within their online communities. These actors play essential roles in shaping narratives, mobilizing participation, and disseminating accurate health information. Studies indicate that online influencers and community-based digital leaders can significantly influence public attitudes toward health behaviors and interventions (Melhem et al., 2023). In Indonesia, numerous health professionals, educators, and activists have gained large digital followings and contribute actively to public health discussions, supporting movements related to vaccination, maternal health, and mental well-being.

Despite these advancements, the digitalization of social movements for health raises concerns about inequalities in participation. While digital tools expand access, they also



create new divides based on literacy, access to devices, and familiarity with digital platforms. Rural communities and low-income groups may still struggle with limited connectivity, inconsistent signals, or lack of digital training. These disparities can restrict their ability to participate fully in digital health movements. Research on Indonesia's digital divide indicates that despite high national penetration rates, the quality and equity of access remain uneven, limiting the reach of digital community health initiatives (APJII, 2023). This highlights the need for policy interventions that prioritize digital inclusivity as part of community health strategies.

Misinformation represents another barrier that complicates the evolution of digital health movements. WHO reported widespread infodemics during the COVID-19 pandemic, where false information circulated more rapidly than scientifically verified data, resulting in confusion and resistance to public health interventions (WHO, 2021). Indonesia experienced similar challenges, particularly regarding vaccines, herbal remedies, and social restriction policies. Digital platforms can amplify misinformation if not regulated effectively, undermining the credibility of health movements and increasing public health risks. Evidence suggests that once misinformation becomes widespread, reversing its influence becomes significantly more difficult, underscoring the importance of digital literacy and content moderation (Aryaningtyas & Risyanti, 2024). Social movements must therefore balance digital empowerment with mechanisms for ensuring information accuracy.

Overall, digital transformation has fundamentally altered how social movements for health operate, expanding their reach, enhancing communication strategies, and enabling hybrid engagement models. These developments illustrate a shift from localized physical communities to dynamic, networked communities capable of mobilizing rapidly and adapting to emerging health challenges. At the same time, digitalization introduces new complexities that require continued attention, particularly concerning equity, trust, and governance. Understanding these dynamics is crucial for designing innovative models of community engagement that effectively support public health in the digital era.

### **Innovative Digital Models of Community Health Engagement in Indonesia**

The rise of digital platforms has enabled the development of innovative models of community engagement that support social movements for health. These models integrate digital communication, participatory technology, and community service mechanisms to enhance responsiveness, inclusivity, and scalability. One emerging model in Indonesia is the use of social media-driven micro-campaigns. These campaigns leverage platforms such as TikTok, Instagram, and Twitter to disseminate health information rapidly and mobilize community participation. Micro-campaigns are characterized by short-form content, user-generated messaging, and rapid sharing dynamics that enable health information to circulate widely without relying on formal institutional channels. Studies show that micro-campaigns significantly increase engagement because they combine entertainment, narrative storytelling, and actionable health tips (Yi et al., 2024). In Indonesia, micro-campaigns promoting vaccination, mental health support, and maternal health awareness have generated millions of interactions, demonstrating their potential to catalyze public health action.

Another innovative model involves digital volunteerism networks. These networks connect individuals through messaging platforms such as WhatsApp, Telegram, and Facebook Groups to coordinate local health initiatives. During the COVID-19 crisis, hundreds of digital volunteer groups emerged in Indonesia to support quarantine logistics, distribute medical supplies, organize teleconsultations, and assist vaccination appointments (Aryaningtyas & Risyanti, 2024). These digital networks enable decentralized action where citizens self-organize based on local needs. Digital volunteerism is effective because it reduces bureaucratic delays, allows rapid decision-making, and fosters collective responsibility. Secondary data from Indonesia's Ministry of Health indicates that digital



volunteer participation increased by 60 percent between 2020 and 2022, illustrating the growing role of digital communities in health service delivery.

A third model gaining prominence is the integration of telehealth platforms into community health initiatives. Telehealth applications such as Halodoc, Alodokter, and SehatQ have become central tools for health consultations, especially in urban areas. Social movements often collaborate with telehealth platforms to deliver specialist advice, provide mental health counseling, or support chronic illness management. Studies show that telehealth contributes to better health access in underserved areas by bridging distance barriers and enabling early intervention (Melhem et al., 2023). In Indonesia, digital communities often share telehealth resources during outbreaks of dengue fever, COVID-19 surges, or mental health crises. These collaborations demonstrate how digital platforms can facilitate community-driven health services in ways that complement formal healthcare systems.

Crowdfunding for health represents another innovative model that has flourished in Indonesia. Platforms such as Kitabisa have enabled communities to raise funds for medical treatment, disaster relief, and health promotion programs. Crowdfunding campaigns often emerge from digital social movements, transforming awareness campaigns into direct action. Research indicates that digital donation ecosystems can significantly improve health equity by mobilizing financial resources from diverse donors (Kenworthy & Igra, 2022). Crowdfunding also promotes transparency and accountability because donors can monitor campaign progress and outcomes. This model has supported thousands of families facing catastrophic health expenses and has become an integral component of community support systems.

An additional innovation involves digital literacy programs focused on improving community understanding of health information. Community groups, NGOs, and digital influencers frequently conduct online workshops, live-streamed health seminars, and interactive Q&A sessions to address misinformation and enhance health communication. Digital literacy programs strengthen community capacity to identify credible information, evaluate health risks, and participate in informed decision-making. These programs align with WHO's recommendations for improving community-based health communication in digital environments (WHO, 2021). In Indonesia, digital health education is increasingly integrated into school curricula, university community service programs, and youth-led movements, reflecting its importance for long-term public health resilience.

To illustrate these models, the following table summarizes key innovative digital community engagement mechanisms, their characteristics, and their contributions to health movements in Indonesia.

**Table 1. Innovative Digital Community Engagement Models for Health in Indonesia**

Model Type	Key Features	Primary Benefits	Evidence of Impact
Social media micro-campaigns	Short-form videos, viral messaging, peer-to-peer dissemination	High engagement, rapid information spread	High interaction rates across platforms such as TikTok and Instagram
Digital volunteerism networks	WhatsApp/Telegram groups, decentralized coordination	Fast response, strong community solidarity	60 percent increase in digital volunteer activities (2020–2022)
Telehealth-integrated community services	Online consultations, remote diagnostics	Expanded access, reduced barriers	Growing telehealth adoption in urban–rural health programs
Health crowdfunding	Donation-based	Financial assistance,	Thousands of



ecosystems	health support, transparent reporting	equity enhancement	medical cases funded annually
Digital health literacy programs	Webinars, online classes, interactive education	Reduced misinformation, empowered decision- making	Increased participation in community health education events

These models indicate that digital platforms not only support communication but also create new pathways for community mobilization, resource distribution, and collaborative problem-solving. They represent a shift toward participatory, citizen-driven health services that increasingly supplement governmental programs. However, challenges remain, including limited digital access in rural regions, inadequate governance of digital health spaces, and difficulties in sustaining volunteer energy beyond crisis periods. These constraints underscore the need for comprehensive frameworks that integrate digital innovation with long-term community health strategies (Andriyan et al., 2025). The emergence of these models demonstrates that digital transformation can strengthen Indonesia’s health ecosystem when supported by appropriate policies, infrastructure, and capacity-building initiatives.

### Strategic Framework for Strengthening Digital-Era Community Health Movements

Strengthening digital-era social movements for health requires a strategic framework that integrates technological, social, and institutional components. The first strategic pillar is the development of inclusive digital infrastructure. Inequitable access to internet connectivity remains a significant barrier for rural communities in Indonesia. According to APJII (2023), internet quality varies widely between Java and outer islands, reducing the ability of rural communities to participate in digital health initiatives. Expanding broadband access, improving connectivity reliability, and supporting affordable digital devices are essential steps to ensure equitable participation. Without addressing infrastructure disparities, digital health movements risk reinforcing existing inequalities rather than reducing them.

A second strategic component involves building digital health literacy. Although digital platforms enable rapid dissemination of health information, they also expose communities to misinformation. WHO (2021) emphasizes that infodemics pose long-term risks to public health, particularly in digitally active countries. To strengthen resilience, community organizations, schools, and health professionals must implement integrated digital literacy programs that teach citizens how to evaluate online information, identify credible sources, and detect misinformation. Digital literacy should become a foundational element of public health strategies because informed citizens are more likely to participate responsibly in health movements and support evidence-based interventions.

Another pillar of the strategic framework is institutional collaboration. Community health movements often operate independently of public health institutions, creating gaps in coordination, resource allocation, and sustainability. Strengthening collaboration between government agencies, NGOs, universities, digital platforms, and community groups can improve alignment between digital activism and national health priorities. Evidence shows that multi-stakeholder partnerships significantly improve program sustainability by providing technical support, funding mechanisms, and policy integration (Yi et al., 2024). In Indonesia, integrated platforms that connect local health offices with digital volunteer networks could help institutionalize community-driven initiatives and improve response efficiency during crises.

The strategic framework must also address sustainability challenges. Digital health movements often surge during emergencies but lose momentum once crises subside. Sustaining engagement requires developing community governance structures, leadership training, and long-term volunteer management systems. Research indicates that health movements with clear leadership roles, community ownership, and ongoing communication



channels are more likely to persist and adapt to emerging challenges (Aryaningtyas & Risyanti, 2024). Digital infrastructures should therefore be designed to support continuous interaction rather than episodic mobilization.

Data governance represents another important strategic pillar. Digital health movements collect and share information through platforms that vary in security standards. Protecting personal health data requires clear protocols for privacy, cybersecurity, and ethical data use. Without such safeguards, community trust may decline, threatening participation levels. National-level digital health policies must therefore adopt consistent governance standards that regulate data storage, access, sharing, and user consent. This aligns with global guidelines emphasizing the importance of ethical digital health ecosystems (Melhem et al., 2023).

Finally, strengthening digital-era health movements requires ongoing research and innovation. Universities and research institutions must collaborate with communities to evaluate digital engagement models, identify best practices, and develop tools tailored to Indonesian socio-cultural contexts. Continuous research ensures that digital health strategies remain adaptive to technological changes and responsive to emerging health challenges. Innovation labs, digital health incubators, and community university partnerships can support these efforts by producing culturally relevant solutions that enhance community capacity.

Overall, this strategic framework highlights the multifaceted nature of digital health movements. Effective community engagement in the digital era depends not only on technological advancements but also on social inclusion, literacy, governance, and institutional cooperation. Strengthening these pillars will enhance the resilience, sustainability, and impact of Indonesia's social movements for health.

#### 4. Conclusions and Suggestions

This study highlights that digital transformation has significantly reshaped social movements for health in Indonesia by creating new avenues for participation, communication, and community mobilization. Digital platforms enable rapid information exchange, diversified engagement strategies, and hybrid collaboration models that strengthen community responsiveness during health crises. Innovative models such as micro-campaigns, digital volunteerism networks, telehealth collaborations, health crowdfunding, and literacy-driven community education demonstrate the expanded role of digital ecosystems in driving public health action. At the same time, the study identifies challenges including digital divide issues, misinformation, sustainability limitations, and fragmented institutional coordination. These challenges signal that digital health movements require not only technological innovation but also systemic support to ensure that participation remains equitable, informed, and impactful. Understanding these dynamics is essential for designing digital engagement strategies that strengthen Indonesia's community health landscape.

Based on these findings, several structural recommendations emerge. First, national efforts must prioritize inclusive digital infrastructure to ensure equal participation across regions. Second, digital health literacy needs to be embedded within community programs and education systems to mitigate misinformation risks. Third, institutional collaboration between government agencies, NGOs, digital platforms, and communities must be strengthened to support long-term sustainability and align community initiatives with national health priorities. Fourth, robust data governance must be implemented to protect user privacy and ensure ethical digital engagement. Fifth, continuous research and innovation are needed to adapt digital health strategies to evolving technologies and socio-cultural shifts. By addressing these structural needs, Indonesia can develop resilient, sustainable, and community-driven digital health movements capable of contributing meaningfully to public health improvement in the digital era.



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