

## **Digital Public Relations in School-Based Health Campaigns: A Systematic Literature Review toward a Hybrid Engagement Model in the Indonesian Context**

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### **Abstract**

This study explores the role of digital public relations in school-based health campaigns and addresses the lack of an integrative framework to link communication, engagement, and digital interaction. The study employed a qualitative Systematic Literature Review (SLR) using the PRISMA framework. A total of 45 peer-reviewed articles published between 2015 and 2024 were analyzed. The study combined bibliometric analysis using VOSviewer and thematic synthesis through open, axial, and selective coding. The findings revealed three key gaps: (1) conceptual fragmentation between communication and engagement theories, (2) limited contextual exploration in developing countries like Indonesia, and (3) the methodological dominance of empirical studies without conceptual integration. The results also indicated that communication practices were largely one-way, engagement was reduced to measurable metrics, and digital media was used primarily as a delivery tool rather than an interactive platform. This study proposed a Hybrid Engagement Model comprising institutional communication, participatory engagement, and digital interaction that could contribute to education and communication research by

positioning schools as active communication hubs and promoting digitally integrated participatory health campaigns.

*Keywords: Communication; Digital Public Relations; Hybrid Engagement; Health Communication; School-Based Campaign*

## **1. Introduction**

The transformation of digital communication has led to changes in communication patterns in society and institutions. The communication process has shifted to a participatory, digital-network-based communication model (Kraus et al., 2021; Sonni et al., 2024; Yustisia et al., 2023). In this context, digital public relations is a strategic approach capable of building engagement and relationships across various digital platforms. As in health communications, digital public relations, as a dynamic, audience-centered strategy, plays a role in influencing public opinion, thereby building awareness and creating behavioral change (Jafar et al., 2023; Rena Pudyastuti et al., 2024; X. Zhao, 2020).

Despite these advances, health campaigns implemented in school settings often remain intervention-oriented, focusing on behavioral outcomes rather than communication processes. School-based health campaigns involve multiple stakeholders, including students, teachers, parents, and government agencies, making communication a crucial component in ensuring program effectiveness. However, existing studies tend to treat communication as a supporting tool rather than a core strategic element, resulting in limited integration between communication, participation, and engagement (Irum et al., 2025; Peiró-Signes et al., 2025; Teo et al., 2024; Yaqub & Al-Sabban, 2023).

This issue is currently a significant issue in the Indonesian context, where large-scale public health initiatives increasingly rely on communication strategies to reach diverse populations. One relevant example in the Indonesian context is school-based health initiatives such as the Free Nutritious Meal Program, which illustrates the complexity of stakeholder communication. This government-initiated program, designed to improve nutrition, illustrates the complexity of implementing school-based health interventions, requiring coordinated communication across stakeholders. However, the role of digital public relations in supporting these initiatives remains underexplored, particularly in terms of how engagement is built across institutional and community levels (Abuhashesh et al., 2021; Maher et al., 2016; Paul & Headley-Johnson, 2025; So & Kwon, 2025).

From the previous literature review and examples from the Indonesian context of the Free Lunch Program, three main gaps can be identified. First, there is a conceptual gap, as studies on digital public relations and health communication are often fragmented and lack an integrative framework linking communication strategies with stakeholder engagement. Second, there is a contextual gap, as most studies have been conducted in Western countries, with limited attention to developing countries like Indonesia. Third, there is a methodological gap, where previous research tends to focus on empirical case studies rather than synthesizing knowledge to develop a broader conceptual model.

Based on these gaps, the main issue addressed in this study is the lack of an integrated conceptual framework explaining how digital public relations can facilitate engagement in school-based health campaigns, particularly in the Indonesian context. Specifically, a key challenge for school-based health campaigns in the digital era lies in the ability to integrate institutional communication with digital citizen participation (Okeke et al., 2025; Rakuasa et al., 2024; Weinstein & James, 2022). Meanwhile, studies on digital health communication confirm that interactive, empathetic, and credibility-based health communication is more effective in building public trust than formal, one-way communication approaches (Alif et al., 2023; Kostygina et al., 2020; Setianti et al., 2025).

Thus, this study aims to develop a conceptual understanding of digital public relations in school-based health campaigns through a systematic synthesis of existing literature. Therefore, this study can provide insight into key research trends and thematic patterns in the literature, identify conceptual and contextual gaps within the focus of this research, and gain conceptual insights related to the integration of digital communication, participation, and interaction. To achieve these objectives, research questions were formulated, which include 1) what are the dominant trends in research on digital public relations in school-based health campaigns?, 2) what are the conceptual and contextual gaps that exist in the current literature?, and 3) how can a hybrid engagement model be developed to explain stakeholder engagement in the Indonesian context? The use of a Systematic Literature Review (SLR) is appropriate for this study because it allows for a structured, transparent, and reproducible synthesis of multidisciplinary research. This approach allows for the identification of research patterns and the development of a conceptual model grounded in existing evidence.

Therefore, an in-depth review of existing research is needed to develop a digital public relations strategy concept that is not only informative but

also collaborative, participatory, and capable of building long-term relationships with the community through various digital communication channels. This study contributes to the literature by providing an integrative framework that positions communication as a central element in school-based health campaigns. Furthermore, it offers a contextually relevant perspective by connecting digital public relations with engagement practices in Indonesia, thus supporting the development of more effective communication strategies in public health initiatives.

## **2. Method**

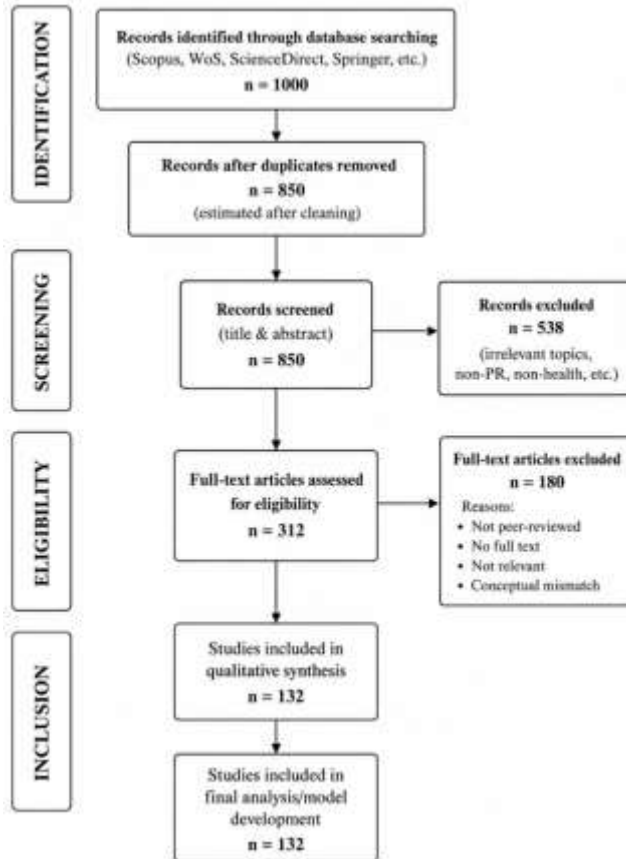
### **2.1 Research Design**

A qualitative approach was used for this research, using the Systematic Literature Review (SLR) method (Creswell, 2012; Creswell & Creswell, 2018). The SLR method was chosen to synthesize existing research on digital public relations in school-based health campaigns. The SLR approach was selected to ensure a structured, transparent, and reproducible process in identifying, evaluating, and synthesizing relevant studies (Kunisch et al., 2023; Owens, 2021; Smela et al., 2023).

The research procedure refers to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). PRISMA was used to ensure the literature selection process was systematic, objective, and measurable, thereby enhancing the validity of the study. In addition, this study combined bibliometric analysis and thematic synthesis to provide both a macro-level mapping and an in-depth conceptual understanding of the research domain.

### **2.2 Procedure of Study**

The research procedure adhered to the PRISMA framework, consisting of identification, screening, eligibility, and inclusion. The study selection process is illustrated in Figure 1.



**Figure 1.** Procedure of Study

- a. The identification stage involved searching for scientific articles. The literature search was conducted in January 2025 across several international databases, including Scopus, Web of Science, ScienceDirect, SpringerLink, Taylor & Francis, Sage Journals, and Google Scholar, as well as nationally accredited ones through the Publish or Perish application. The search was limited to articles published between 2015 and 2024 to obtain the latest studies related to digital health communication and digital media-based public engagement. The search process utilized Boolean operators to ensure comprehensive retrieval of relevant studies. The primary search string used was:
- 1) ("digital public relations" OR "digital PR") AND
  - 2) ("health campaign" OR "health communication") AND
  - 3) ("school-based" OR "education") AND
  - 4) ("engagement" OR "participation")

- b. The screening phase involved removing duplicate articles and selecting titles and abstracts based on their relevance to the research topic. The initial search yielded 1,000 records. After removing duplicates, 865 records remained. Title and abstract screening reduced the number to 312 articles. Full-text assessment resulted in 45 articles that met all inclusion criteria and were included in the final analysis.
- c. The eligibility stage was conducted through a full-text review of articles that passed the initial screening process. To enhance reliability, a subset of articles was independently screened by two researchers. Discrepancies were resolved through discussion, and final decisions were reached through consensus.
- d. The inclusion stage was conducted by selecting final articles that met all criteria for in-depth analysis. Cross-checking procedures were performed to ensure consistency, and final decisions were reached by consensus.

### **2.3 Data Collection Technique**

The data collection process involved systematic identification and selection of relevant studies based on predetermined inclusion and exclusion criteria.

The inclusion criteria were as follows:

- a. peer-reviewed journal articles indexed in Scopus or Web of Science,
- b. published between 2015 and 2024,
- c. written in English or Indonesian,
- d. discussing digital communication, public relations, or health campaigns, and
- e. containing empirical or conceptual discussions related to stakeholder engagement.

Exclusion criteria included:

- a. conference proceedings, editorials, and opinion papers,
- b. non-peer-reviewed publications,
- c. articles without full-text access, and
- d. Studies not directly related to the communication process in health campaigns.

### **2.4 Data Analysis**

Data analysis was conducted using two complementary approaches.

- a. Bibliometric analysis was conducted using VOSviewer to identify research trends and thematic clusters. This analysis involved keywords that mapped relationships between research topics. Bibliometric analysis produced a visual map depicting dominant research themes and emerging trends, providing a macro-level understanding of the research landscape.
- b. Thematic synthesis was conducted to analyze the content of the selected studies. This process involved three stages: 1) Open coding was used to identify key concepts and recurring themes. 2) Axial coding grouped these codes into broader conceptual categories. 3) Selective coding integrated these categories into a coherent conceptual framework. To ensure validity and reliability, the coding process was iterative and cross-checked between researchers. Discrepancies were resolved through discussion and consensus.

The results of the bibliometric and thematic analyses were integrated to provide a comprehensive understanding of the research domain. Bibliometric analysis was used to map research trends, while thematic synthesis was employed to develop the conceptual framework.

### 3. Results

The data analysis revealed themes related to digital public relations, health communication, and stakeholder engagement in community-based educational settings. Most studies used an empirical approach, while conceptual research was limited.

**Table 1.** Finding of Thematic Cluster

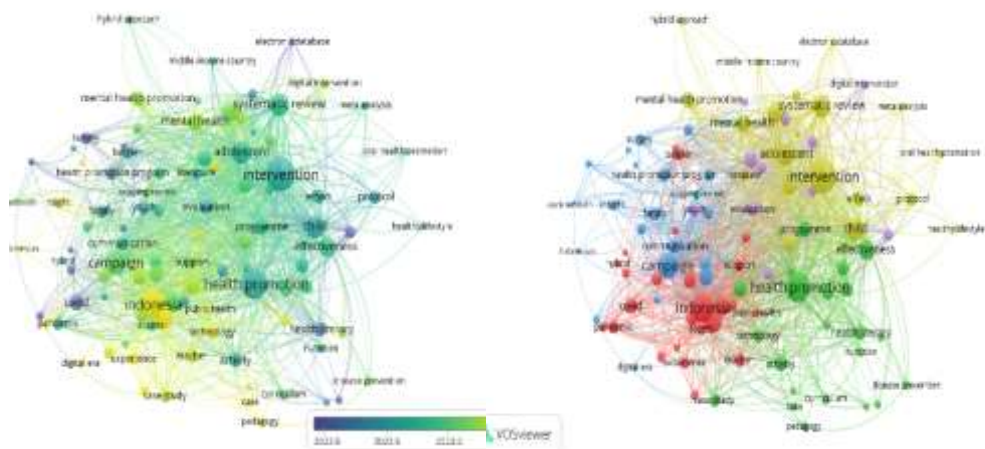
<b>Main Cluster</b>	<b>Dominant Keywords</b>	<b>Key Characteristics of Findings</b>	<b>Research Gaps</b>	<b>Research Implications</b>
1 Health Intervention	intervention, effectiveness, program, child	Focus on evaluating the impact of health programs	Lack of attention to communication processes	Shift toward an engagement-based model. Identified Gaps del
2 Health Promotion	health promotion,	Emphasis on health education	Limited integration with digital	Integration of health and

<b>Main Cluster</b>	<b>Dominant Keywords</b>	<b>Key Characteristics of Findings</b>	<b>Research Gaps</b>	<b>Research Implications</b>
3 Communication & Campaign	literacy, nutrition, campaign, communication, support	and disease prevention Used primarily as a tool for message delivery	communication Not positioned as a core strategic element	communication PR as a core system
4 Education	teacher, curriculum, pedagogy	Focus on the school-based implementation context	Disconnected from communication systems	Integration of school-based communication
5 Digital & Technology	technology, access, digital intervention	Digital is seen as a technological tool	Not conceptualized as an engagement ecosystem	Digital PR ecosystem
6 Contextual (Indonesia)	Indonesia, pandemic, access	Focus on local case-based studies	Not yet developed into theoretical frameworks	Context-based theory development
7 Hybrid Approach	hybrid, hybrid approach	Emerging as a conceptual idea	Weak integration with dominant research clusters	Hybrid engagement model

Table 1 presents the characteristics of the selected studies, including their focus and methodological approach. The table shows that the majority of studies focused on social media-based engagement and behavioral outcomes. Research related to school-based health campaigns is largely structured around the health intervention paradigm, with a strong emphasis on program effectiveness and outcome evaluation, particularly

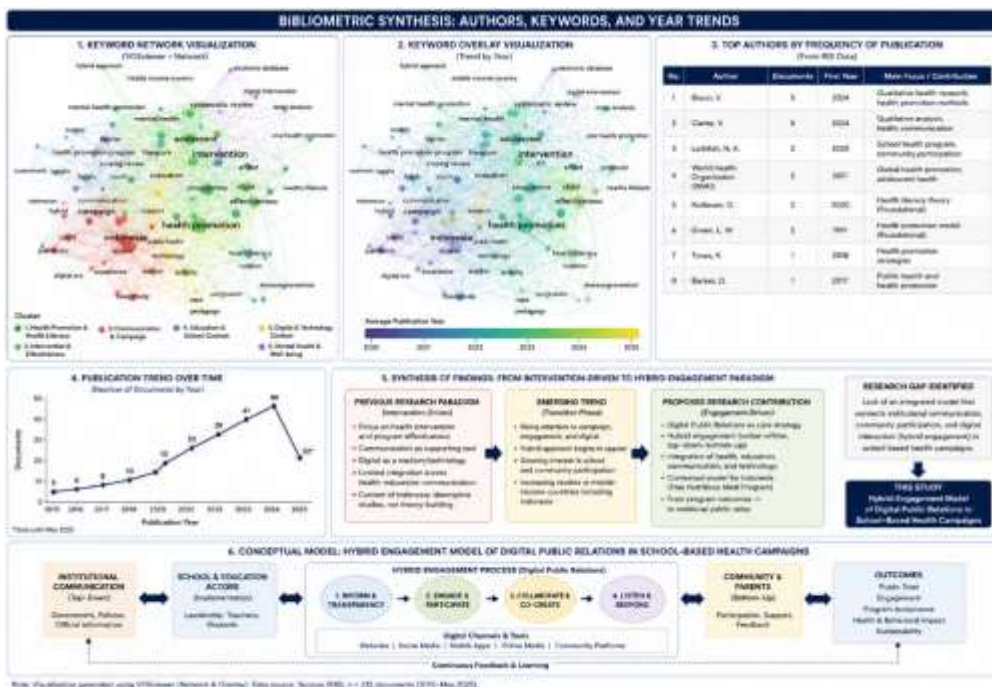
among children. Research related to communication is less integrated, with communication still positioned as a supporting tool rather than a strategic core, and digital technology is largely treated as an operational medium rather than an engagement ecosystem. Even in the educational context, it has not been linked to communication strategies. Meanwhile, studies in the Indonesian context are largely descriptive in nature without providing significant theoretical contributions. These gaps collectively highlight the need for a new integrative framework, leading to the proposal to develop a Digital Public Relations Hybrid Engagement Model that bridges health, communication, education, and the digital ecosystem in school-based health campaigns.

The bibliometric analysis was not limited to identifying keywords but was used to interpret relationships between research themes. Bibliometric analysis using VOSviewer found that the research landscape related to digital public relations, health promotion, and school-based health campaigns has expanded and become more cross-disciplinary or multidimensional. This finding indicates that research related to health campaigns, communication, and public relations is dominated by public health intervention approaches oriented towards program effectiveness. Even the keywords found in this research are still strongly related to effectiveness, child, adolescent, and program, indicating that the main focus of global research remains on the impact of health programs on target groups, especially children and adolescents. Meanwhile, the keyword campaign is closely linked to communication, support, and public health, which demonstrates the role of communication as an instrument in implementing health campaigns.



**Figure 2.** Bibliometric Analysis of the Research Landscape

Figure 2 shows that the first cluster focuses on digital public relations and social media, indicating a strong emphasis on platform-based communication strategies. The second cluster focuses on health communication and behavior change, suggesting an outcome-oriented approach. The third cluster highlights engagement and participation, reflecting an emerging shift toward interactive communication. Another cluster demonstrates a connection to systematic reviews, digital interventions, and meta-analyses, indicating the development of research synthesis-based approaches in this field. Research from 2022 to 2023 follows a trend of increasing contextual research in developing countries, including Indonesia, and focuses on technology and access aspects in health program implementation. On the other hand, concepts such as systematic reviews, interventions, and mental health tend to emerge earlier and have become foundational in previous research. Importantly, the network structure shows weak linkages between institutional communication and participatory engagement, indicating fragmentation in the literature.



**Figure 3. Bibliometric Synthesis**

The bibliometric synthesis indicates that research in school-based health campaigns increased significantly between 2020 and 2025. Early

studies (2020–2022) were dominated by health intervention and mental health topics, reflecting a problem-oriented approach. In contrast, more recent studies (2023–2025) show a shift toward participatory, contextual, and engagement-oriented approaches. During this phase, research remained problem-driven, with a primary focus on health impacts and intervention effectiveness. In the 2023–2025 period, the research focus shifted toward more contextual and participatory aspects, as demonstrated by Lathifah et al.

The thematic synthesis was conducted using open, axial, and selective coding to identify patterns across the selected studies. Three major themes emerged: 1) communication as an instrumental tool, 2) fragmented engagement practices, and 3) lack of integrative frameworks.

**Table 2.** Thematic Coding Results: Categories and Representative Findings

<b>Main Theme</b>	<b>Category</b>	<b>Description</b>	<b>Representative Findings from Literature</b>
Communication as an Instrumental Tool	One-way communication	Communication is used to deliver information rather than build relationships	Most studies emphasize information dissemination through digital platforms without interactive feedback mechanisms
	Behavior-oriented messaging	Focus on influencing behavior outcomes	Health campaigns prioritize behavioral change outcomes over communication processes
	Institutional dominance	Top-down communication approach	Government and institutions dominate message production with limited stakeholder involvement

Main Theme	Category	Description	Representative Findings from Literature
Fragmented Engagement Practices	Metric-based engagement	Engagement is measured through likes, shares, and comments	Engagement is operationalized through social media analytics rather than meaningful interaction
	Passive participation	The audience acts as the message receiver	Stakeholders are rarely involved in co-creation or decision-making processes
	Limited interaction depth	Lack of dialogic communication	Interaction remains superficial and does not foster long-term engagement
Lack of Integrative Frameworks	Disconnected concepts	PR, engagement, and participation are studied separately	Studies rarely integrate a communication strategy with engagement theory
	Absence of a holistic model	No unified framework	Existing studies focus on isolated variables rather than system-level interaction
	Contextual limitation	Western-centric research	Limited studies address developing country contexts such as Indonesia

**Source:** Synthesized from 45 selected articles (2015–2024)

Table 2 indicates that communication is predominantly treated as a one-way process, while engagement is often limited to measurable metrics rather than meaningful participation. These thematic findings directly inform the development of the Hybrid Engagement Model by highlighting the need to integrate institutional communication, participatory engagement, and digital interaction into a unified framework.

Global literature remains oriented toward an outcome-based approach to health interventions. However, the emergence of keywords such as campaign, communication, digital, technology, and engagement indicates a shift toward a digital communication paradigm, although its position is still not central to the research network. From the author's perspective, research in this field remains fragmented and interdisciplinary, involving researchers from public health, education, and communications.

However, there is no apparent dominance of any particular author or research group specifically developing an integrative model between digital public relations and school-based health campaigns. This indicates that this field remains open to new theoretical development. Contextually, the emergence of keywords like Indonesia, access, and technology in the recent period indicates that developing countries are beginning to become a focus of research, particularly in relation to digital access and the implementation of school-based health programs. However, research in the Indonesian context still tends to be descriptive and has not yet produced many conceptual models that can be generalized globally. Based on the integration of bibliometric and thematic findings, three major gaps were identified:

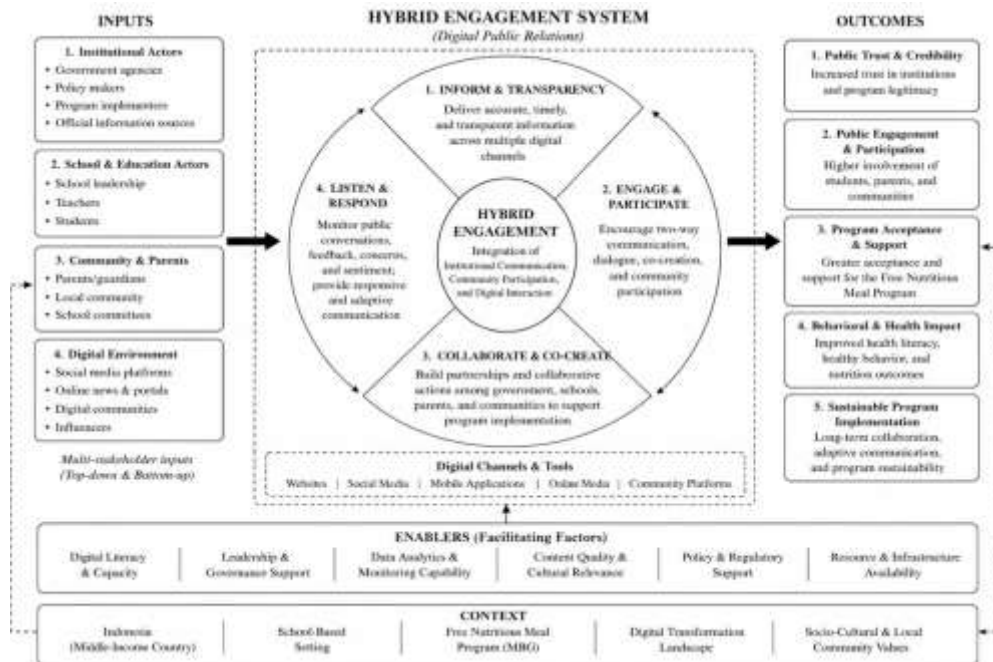
- a. Conceptual gap: lack of integration between communication strategy and engagement theory
- b. Contextual gap: limited research in non-Western contexts
- c. Methodological gap: dominance of empirical case studies without conceptual synthesis

These gaps highlight the need for a more integrative framework linking digital public relations, participation, and engagement.

#### **4. Discussion**

The findings of this study should not be interpreted merely as descriptive trends but as evidence of structural limitations in how digital public relations and health communication have been conceptualized in previous research. From the perspective of dialogic communication theory, effective public relations requires two-way interaction, openness, and responsiveness. However, the reviewed literature shows that communication in health campaigns remains largely one-way and instrumental. Engagement is often reduced to surface-level metrics such as likes, shares, and comments. This reflects a limited understanding of engagement. Engagement theory emphasizes that meaningful engagement involves cognitive, emotional, and behavioral dimensions, which are largely absent in the reviewed studies.

Based on the conceptual, contextual, and methodological gaps identified in the results, there is a clear need for a more integrative framework that connects communication, participation, and digital interaction.



**Figure 4.** Hybrid Engagement Model of Digital Public Relations in School-Based Health Campaigns: Indonesia's Free Nutritious Meal Program

The model consists of three interrelated dimensions, namely 1) institutional Communication (top-down communication), 2) participatory Engagement (bottom-up involvement), and 3) digital Interaction (mediating layer). These dimensions interact dynamically, transforming communication from a linear transmission process into a co-creation process

The findings of this study indicate that research on school-based health campaigns is still largely shaped by a traditional intervention perspective, where success is primarily measured through program effectiveness and behavioral outcomes, particularly among children and adolescents. There is a consistent pattern of studies, particularly on changes in health knowledge, attitudes, and behaviors (Mukamana & Johri, 2016; Nagy-Pénzes et al., 2022; Wakefield et al., 2010; Xu et al., 2020; Yeager et al., 2017; Yeager & Dweck, 2012). Previous research has

not yet explored how communication concepts are involved in shaping public image related to program implementation (Moeller et al., 2024; Odongo, 2024; Zurc & Laaksonen, 2023).

Bibliometric analysis of data indicates that communication remains a key element in research. In many studies, campaigns are designed as one-way information delivery systems, where messages are delivered to target audiences with the expectation of behavioral change. This finding aligns with previous criticisms that traditional health communication models tend to be linear and sender-oriented, limiting opportunities for dialogue and participation (Aparicio-Martinez et al., 2019; Juliansyah & Anwar, 2025; Oludapo et al., 2024; Puigvert-Santoro et al., 2025; Putri et al., 2025).

In contrast, newer perspectives in digital communication highlight the importance of interaction, co-creation, and engagement as key drivers of effective communication (Johnston & Taylor, 2018; Phogat et al., 2025; Stoumpos et al., 2023). This demonstrates a conceptual gap between digital communication approaches and health campaign practices, which are still dominated by conventional intervention approaches. In other words, the relationship between digital communication, public engagement, and health campaign effectiveness has not been fully conceptualized in the existing literature.

Previous research in educational communication has shown that schools have the potential to function as centers of social communication, where students, teachers, and communities interact and co-construct meaning (Bower et al., 2023; Gao et al., 2024; Merino et al., 2025; Raptou et al., 2017a). However, this potential has not been fully utilized in existing health campaign models, which still treat schools as passive recipients of interventions rather than active participants in the communication process.

The role of digital technology further exacerbates this gap. Findings indicate that digital tools are widely used, but primarily as channels for delivering information, rather than as spaces for building relationships or fostering engagement. Digital health communication should be able to move beyond the limits of conceptual development (Lupton, 2013; Y. Zhao & Wang, 2023). Moreover, in the era of the development of digital platforms and social media as supporting two-way communication, many health campaigns still rely on top-down messaging strategies (Fischer-Preßler et al., 2023; Gazi et al., 2024; Kite et al., 2023; Stellefson et al., 2020; Yaqub & Al-Sabban, 2023). Interestingly, the data also indicates a recent shift toward more participatory and context-sensitive approaches, particularly in studies conducted after 2020. In this context, the increased attention to countries like Indonesia reflects a growing awareness of local

dynamics, such as digital access, cultural context, and institutional capacity. However, as noted in the findings, much of this research remains descriptive in nature and has yet to produce a robust conceptual framework. One of the most significant gaps identified in this study is the limited development of the concept of hybrid engagement. While the idea of combining online and offline communication, as well as institutional and community participation, has begun to emerge, it has not yet been fully integrated into existing models.

Based on the overall analysis, it is clear that research on school-based health campaigns is still dominated by health intervention and program effectiveness approaches, while the digital public relations and hybrid engagement dimensions have not yet received primary attention. This gap indicates the need for a new conceptual model capable of integrating digital communication, public participation, and health campaign strategies within a holistic framework. Thus, these findings reinforce the urgency of developing a Hybrid Engagement Model of Digital Public Relations in School-Based Health Campaigns, which focuses not only on health program effectiveness but also on how public engagement is built through the integration of institutional communication, digital media, and school community participation in the Indonesian context, particularly in the implementation of the Free Nutritional Meal Program.

This study has several limitations. First, the reliance on published literature may introduce publication bias. Second, the included studies vary in methodological approaches, which may affect the consistency of findings. Third, the proposed model has not yet been empirically validated. Future research is needed to test the applicability of the Hybrid Engagement Model in real-world school-based health campaigns.

## **5. Conclusion**

The findings of this study conclude that research related to digital public relations in school-based health campaigns demonstrates a predominance of intervention-oriented approaches and an emphasis on program effectiveness and behavioral outcomes, while communication remains largely positioned as a supporting tool rather than a strategic and relational process. Bibliometric mapping and thematic synthesis identified three major gaps in the literature: conceptual fragmentation between communication and engagement, limited contextual exploration in developing countries, and the absence of an integrative framework. Therefore, this study proposes a conceptual Hybrid Engagement Model of digital public relations as a dynamic system consisting of three interrelated dimensions: institutional communication (top-down), participatory

engagement (bottom-up), and digital interaction (mediating layer). This model bridges the previously separate domains of health communication, public relations, education, and digital ecosystems into a unified conceptual framework.

Theoretically, the results of this study contribute to the development of digital public relations and health communication literature by extending engagement theory and dialogic communication principles to the context of school-based health campaigns. Thus, this study also presents a paradigm shift in communication from a linear transmission model to stakeholder engagement. Empirically, this study has implications for understanding changes in health campaign design that integrate communication strategies with participatory mechanisms rather than relying solely on top-down dissemination. For educators and schools, these findings highlight the importance of positioning schools as active communication hubs that facilitate interactions between students, parents, and the community. For communication practitioners, this model emphasizes the strategic use of digital platforms not only as channels for information delivery but also as spaces for engagement, dialogue, and relationship building.

This study has several limitations, namely secondary data from published literature, database selection, and inclusion criteria; analysis limited to articles published in English and Indonesian, which may introduce language bias; the temporal scope (2015–2024) may exclude previous baseline studies; and the thematic synthesis process involved interpretive coding. Therefore, future research could focus on empirical validation of the proposed Hybrid Engagement Model in real-world contexts, particularly in school-based health programs. Longitudinal studies are needed to examine how engagement evolves over time, while platform-specific analyses can provide insights into the role of different digital media.

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