

Artículo de Investigación

# Civic engagement and health communication in the context of COVID-19 crisis: A systematic review

## Compromiso cívico y comunicación para la salud en el contexto de la crisis del COVID-19: una revisión sistemática

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### Abstract:

**Introduction:** The COVID-19 pandemic, the first public health crisis updated in real-time, has integrated digital communication into daily life. This necessitates reflecting on Health Communication from a sociocultural perspective and improving health literacy to effectively manage the pandemic. **Methodology:** Literature on health communication during COVID-19 from 2020 to 2023 was reviewed using the Scopus and Web of Science databases, following the PRISMA protocol to identify evidence and avoid bias. **Results:** Digital communication was essential for sustaining communicative practices and addressing the health crisis. **Discussion:** Citizen participation demonstrated its potential in crisis management through creativity, emotional support, and dissemination of educational messages. Communication inequities and their impacts on vulnerable populations highlight the need for continued research in health communication. **Conclusions:** Integrating perspectives from Communication for Development and Social Change (CDCS) and positioning health communication as a subfield of social development is essential for deepening research and promoting active citizen participation in the health sector.

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**Keywords:** COVID-19; civic engagement; citizen participation; health communication; social change; crisis communication; crisis response; social media.

### **Resumen:**

**Introducción:** La pandemia de COVID-19 marcó la primera crisis de salud pública actualizada en tiempo real, integrando la comunicación digital en la cotidianidad. Esto obliga a reflexionar sobre la Comunicación para la Salud desde una perspectiva sociocultural y mejorar la alfabetización sanitaria para manejar la pandemia de manera eficaz. **Metodología:** Se ha revisado literatura sobre Comunicación para la Salud durante la COVID-19 desde 2020 hasta 2023, utilizando las bases de datos Scopus y Web of Science. Se siguió el protocolo PRISMA para identificar evidencia y evitar sesgos. **Resultados:** La comunicación digital fue esencial para mantener prácticas comunicativas y abordar la crisis sanitaria. **Discusión:** La participación ciudadana demostró su potencial en la gestión de la crisis a través de la creatividad, apoyo emocional y difusión de mensajes educativos. Las inequidades comunicativas y sus impactos en las poblaciones vulnerables resaltan la necesidad de continuar investigando la comunicación para la Salud. **Conclusiones:** Integrar perspectivas de la Comunicación para el Desarrollo y el Cambio Social (CDCS) y posicionar la comunicación para la salud como un subcampo del desarrollo social es fundamental para profundizar la investigación y promover la participación ciudadana activa en el sector salud.

**Palabras clave:** COVID-19; compromiso civil; participación ciudadana; comunicación para la salud; cambio social; comunicación de crisis; respuesta a las crisis; redes sociales.

## **1. Introduction**

The COVID-19 pandemic has marked the emergence of the first public health crisis to be updated in real-time in the digital age, where digital communication has become seamlessly integrated into our daily lives. The formidable risks posed by COVID-19, along with the secondary disaster known as the infodemic—the overabundance of information, some accurate and some not—require us to reflect deeply on current health communication research. This reflection should extend beyond conventional perspectives (Burgoon, 1992; Jackson, 1992; Rogers, 1994) to also embrace the socio-cultural perspective (Gumucio-Dragon, 2001; Dutta & Elers, 2020; Servaes, 2002; Marí, 2020), which, despite being equally important, has often received less attention.

Whether in everyday life or during a public health emergency of international concern (PHEIC), such as the COVID-19 crisis, health communication is crucial. It involves the study and application of communication strategies aimed at informing and influencing individual and community decisions regarding health. In this context, focusing on health communication as a critical component of citizen education is essential, particularly in enhancing health literacy. By improving health literacy, we empower individuals to manage the pandemic more effectively. This includes ensuring they are well-informed about health practices, preventive measures, and coping strategies. Such a focus not only addresses immediate health concerns but also contributes to building a more resilient and knowledgeable society—a society that is better equipped to manage future health crises through informed decision-making and proactive health behaviours.

Amid the turbulent atmosphere of widespread social anxiety and the infodemic during the pandemic, citizen participation has demonstrated its potential in managing the crisis, particularly within the dominant perspective of disease control in health communication. This is evidenced through citizens' creativity in devising innovative solutions, their emotional support for each other, and their role in disseminating educational health messages, crucial

activities that came to the fore during strict preventive measures such as lockdowns. By examining these communicative experiences during the COVID-19 crisis, valuable insights can be drawn for future pandemic preparedness and response.

Moreover, the issue of communicative inequity—where disparities in access to and understanding of health information affect marginalized and disadvantaged populations—underscores the urgent need for further reflection on current health communication research. This necessity stems not only from the close relationship between people's health conditions and their social circumstances but also from the imperative for citizens to actively engage in health promotion processes. Inclusion in these processes is vital for identifying effective solutions to the social and political issues that diseases can expose and for fostering the necessary social changes. These changes should not be limited to the micro level of personal behaviour change but should also extend to the macro level, where social norms and structures are reformed to create a more equitable health landscape.

In this sense, integrating perspectives from Communication for Development and Social Change (CDCS) and positioning health communication as a subfield of social development is crucial for deepening academic inquiry in this specific focus. This approach aims to explore potential transformative alternatives within the health sector, emphasizing active citizen participation.

### **1.1. Rationale**

This research is situated within the domain of health communication, a specialized branch of development communication, as articulated by scholars such as Dutta (2008, 2017a, 2017b, pp. 45-59) and others (Kreps *et al.*, 2003; Servaes, 2002). Health communication operates within the broader framework of communication for social change, with a particular emphasis on the role of citizenship in this context. The academic and practical potential for growth in social change-oriented communication within health communication is significant, as demonstrated by the work of Kreps *et al.* (2003), Servaes (2002), Thompson *et al.* (2011), and Marí (2020). These contributions underscore the importance of fostering a dialogue that not only informs but also engages citizens in the co-creation of health policies and practices that are responsive to societal needs and aspirations.

In crisis situations, such as the COVID-19 pandemic, citizen participation plays a decisive role (Thiery *et al.*, 2021). It is crucial not only to consider how to communicate effectively but also to address the fundamental questions of 'what to communicate and for what purpose' within a given context (Díaz-Bordenave, 1981, p. 18). Previous studies have highlighted the potential of citizen involvement in civilian emergency response systems for aid (Lai *et al.*, 2019; Tang *et al.*, 2021). In the specific context of the health crisis, citizen participation has significantly transformed towards digital communication. This shift suggests an increased likelihood of citizen engagement in crisis responses through digital platforms, which offer new avenues for information sharing, community support, and collective action.

Citizen participation has been a subject of extensive scholarly investigation. As early as 1969, Arnstein (Arnstein, 1969, p. 216) unequivocally declared, "citizen participation is citizen power", highlighting its pivotal role in shaping societal dynamics. Arnstein's seminal work began with an exploration of a fundamental question: "What is citizen participation, and how does it relate to the social imperatives of our time?" Over half a century later, this question retains its relevance, particularly when recontextualized to examine the nexus between citizen participation and health crisis management.

The conceptualization of citizen participation has been further enriched by the contributions of Castells (2006, 2009, 2012), a distinguished theorist of the information and communication society. His analytical insights into the influence of communication technologies and social networks on participatory processes offer valuable perspectives on understanding the mechanisms through which these elements facilitate information dissemination and community organization during health crises, such as the COVID-19 pandemic.

In the context of a health crisis, citizen participation denotes the proactive and substantive engagement of the community in a spectrum of public health processes. This engagement transcends the mere reception of information, extending to the collaborative generation of culturally tailored solutions and strategies. It encompasses awareness and sensitization initiatives that enlighten the community regarding the health situation, thereby fostering a comprehensive understanding of preventive measures and disease management protocols. Furthermore, it implicates a commitment to mutual aid and shared responsibility in health, underscoring the collective dimensions of response efforts.

In this context, citizen participation extends to community support activities, where individuals assume shared responsibility for the maintenance and care of both personal and collective health. The dissemination of health education knowledge is a critical component of this process. Citizens are not merely passive recipients; they actively engage in and influence decision-making processes that have implications for public health. They participate in consultations and dialogues with health authorities, ensuring that their perspectives are integrated into policy and practice.

Furthermore, citizens establish support and collaboration networks with various local actors, forming strategic alliances that enhance the effectiveness of responses to health crises. The utilization of digital tools has significantly facilitated this participation, promoting virtual platforms for communication and information exchange.

These platforms enable real-time interaction and the rapid dissemination of vital health information. This conceptualization acknowledges the community as a key agent, not only in the reception but also in the creation of messages and strategies to address health crisis situations. It underscores the importance of recognizing and leveraging the collective knowledge, experiences, and capabilities of the community in crafting responsive and inclusive health communication strategies.

Civic engagement, a critical facet of citizen participation, involves active involvement at all levels of health crisis management. In the context of a health crisis, civic engagement is characterized as a dynamic process through which community members actively participate in addressing public health issues. It is essential to approach current challenges from an inclusive and participatory perspective, wherein civic engagement assumes a pivotal role. It is defined by the proactive involvement of individuals in community matters, with the aim of promoting the general welfare.

Moreover, it fosters integration and social cohesion, as collaborative efforts in community initiatives serve to strengthen the social fabric. The overarching goal of civic engagement is to address the concerns of citizens and enhance well-being by undertaking collective actions directed at resolving issues of public interest. Levine (2011) conceptualizes civic engagement as actions that reflect an individual's emotional attachment to the ideals and institutions of public life. According to Levine (2011), if civic engagement were narrowly defined as participation in the ideals and institutions of public life, it would be confined to political life.

Consequently, such a definition would limit civic participation to actions by citizens intended to influence government action and policy formulation. However, civic engagement can also be understood in a broader sense, encompassing all forms of participation in group and associational life, irrespective of whether they directly involve public institutions and ideals. This work aligns with the latter conceptualization, embracing a comprehensive understanding of civic engagement that extends beyond the political sphere to include a wide range of participatory activities within community life.

## **1.2. Objective**

The objective of this research is to examine the focus and trends of civic engagement in health communication from a socio-cultural perspective during the COVID-19 pandemic, an area that has received comparatively less attention than the dominant research focus.

The specific aims of this research are: a) To review scholarly contributions from 2020 to 2023, encompassing the various phases of the COVID-19 pandemic, with the purpose of observing and analysing trends in research focus and the theoretical perspectives presented in articles that address citizen participation or civic engagement; b) To examine the methodologies adopted by the works within this research trajectory; and c) To identify the research gaps based on the findings and limitations of the related studies, particularly concerning the role of citizens as active participants in communicating about COVID-19 and health from a culture-centred and participatory perspective.

## **2. Methodology**

This review adheres to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol, which encompasses the definition of review questions, the development of a search strategy, study selection, data extraction, and synthesis. The process was meticulously documented in accordance with PRISMA guidelines (Page, 2021).

### **2.1 Search strategy**

A systematic search was conducted on 8 May 2024, using two reputable databases: Scopus and Web of Science. The search syntax, designed to encompass core concepts and terms related to COVID-19, health and risk communication, and civic engagement, was meticulously tested and refined through several preliminary searches. This iterative process ensured the relevance and effectiveness of the search strategy. On 31 May 2024, the search strategy was updated and complemented by the first author, with the second author of the study verifying the modifications. This collaborative effort refined the search results, preparing them for the subsequent step of assessment.

The final search strategy involved applying keyword strings in both selected databases, utilizing Boolean search techniques to filter journal articles in the English language published between 2020 and 2023. These articles were selected based on their relevance to the study's thematic focus. The specific keyword strings employed are listed below:

Web of Science: "covid-19" AND "health communication" OR "risk communication" OR "crisis communication" OR "crisis response" OR "public health" AND "civic engagement" OR "public engagement" OR "citizen engagement" OR "citizens' participation" OR "citizen participation" OR "public participation" AND "digital communication" (Topic) AND English (Language) AND Communication (Web of Science Categories) AND Article (Document Type)

Scopus: TITLE-ABS-KEY ("covid-19" AND "health communication" OR "risk communication" OR "crisis communication" OR "crisis response" OR "public health" AND "civic engagement" OR "public engagement" OR "citizen engagement" OR "citizens&apos; participation" OR "citizen participation" OR "public participation" ) AND PUBYEAR > 2019 AND PUBYEAR < 2024 AND PUBYEAR > 2019 AND PUBYEAR < 2024 AND PUBYEAR > 2019 AND PUBYEAR < 2024 AND ( LIMIT-TO ( PUBSTAGE , "final" ) ) AND ( LIMIT-TO ( DOCTYPE , "ar" ) ) AND ( LIMIT-TO ( LANGUAGE , "English" ) )

Our search yielded 654 results in Web of Science and 166 results in Scopus; after removing duplicates (n=1) and irrelevant results (n = 735), 36 records in Web of Science and 48 records in Scopus were retained for screening and eligibility assessment.

## *2.2 Screening and eligibility criteria*

The titles and abstracts of the identified publications were independently scrutinized by both authors to ascertain their potential relevance. A total of six disagreements arose during this initial screening process, which were amicably resolved through thorough discussion. For inclusion in our review, studies had to meet the following criteria: they must have undergone peer review and: focus, in whole or in part, on COVID-19-related health and risk communication; present empirical research findings illustrating the role of civic engagement in COVID-19 communication, or be designed to explore or address such civic engagement; present extractable findings and conclusions regarding the approaches or initiatives undertaken by citizens and their level of engagement or participation during the COVID-19 pandemic in the communication domain.

Excluded registers were: 1) Studies that investigated health messaging in relation to other pandemics or public health crises (e.g., SARS, AIDS, MERS, Zika) were excluded, as they did not directly pertain to the COVID-19 context; 2) Studies that examined civic engagement or citizen participation but were not specifically related to COVID-19 were not included, as they did not address the pandemic's communication dynamics; 3) Research reports on the health, economic, and social impacts of COVID-19 or the effects of engagement with prevention protocols were excluded if they did not have objectives focused on health communication, risk communication, or crisis communication; 4) Studies that emphasized interests other than citizens' participation and/or did not focus on citizens' approaches, contributions, or experiences during COVID-19 at the communication level were not considered; 5) Studies related to civic engagement that were government-led or organization-led were excluded, as the focus of this review is on citizen-initiated or citizen-driven engagement; 6) Publications without available abstracts were excluded to ensure a thorough preliminary assessment of the studies' relevance and methodology.

After the initial screening of abstracts and titles, 71 studies were selected for full-text assessment in the first round of screening. Subsequent to the second round of screening, this number was reduced to 33 studies to further refine the records for analysis.

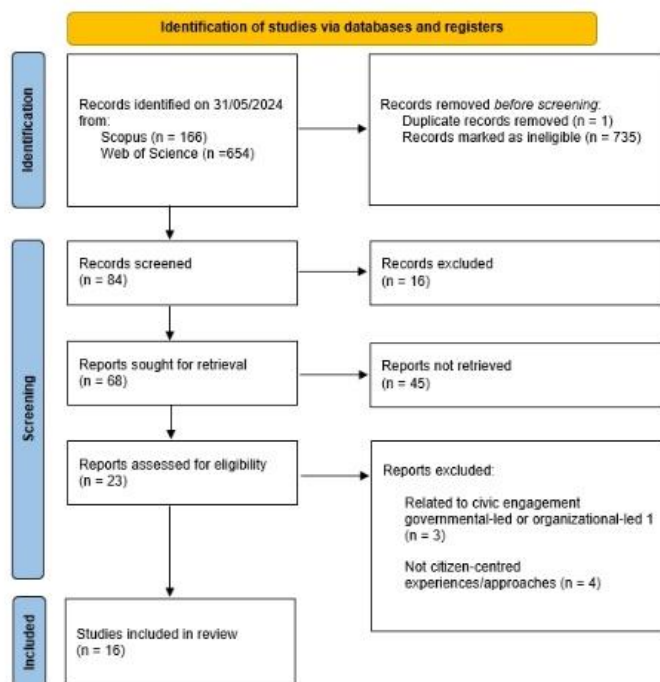
For Open Access publications, the full text of the articles was retrieved not only to determine eligibility for studies where the abstract and title were insufficient but also for supplementary use in the analysis.

Upon full assessment of the retained studies based on their abstracts, 16 records met the outlined criteria and contained extractable data focusing on civic engagement or citizen participation in communication related to their approaches, initiatives, or experiences during the COVID-19 pandemic. Any disagreements that arose during the screening process were resolved amicably through discussion.

The full search and study selection process has been documented in Figure 1.

**Figure 1.**

*PRISMA flow diagram*



**Source:** Own creation (2024).

### 2.3 Data extraction and synthesis

Data extraction was conducted collaboratively by both authors of this study. The first author was responsible for the initial filtering of irrelevant studies, a necessary step due to the limitations inherent in manual keyword searching within the search engines of the selected databases, which resulted in the exclusion of 89% of the studies. The second author conducted a duplication check to ensure accuracy and consistency of the study selection.

During the screening process, which involved examining titles and keywords, the first author applied the first round of refinement, narrowing the records to 33 articles. Subsequently, both authors engaged in a second round of refinement through discussion to determine the final selection of 16 articles for analysis.

The level of agreement between the authors was over 90% on all data extraction fields, encompassing the following categories: background information (including author, year, country, and study objectives), methods (study design, case/participants/sample size), and results and conclusions (the approaches, contributions, or experiences studied, the feasibility and acceptability of the study, and its limitations).

The extracted data were analysed using a narrative synthesis approach. This method was employed to integrate the findings and derive conclusions from the collective evidence of the reviewed literature.

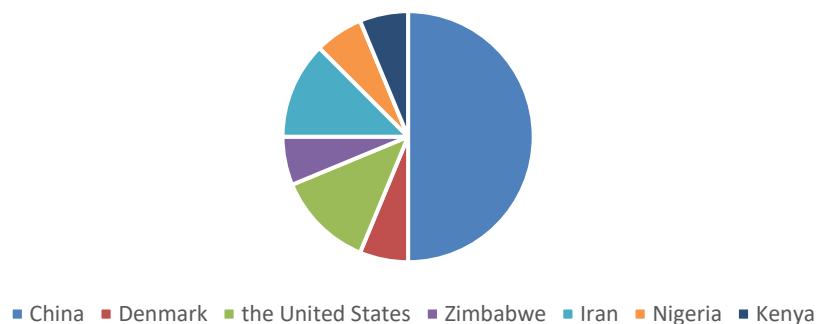
### 3. Results

#### 3.1 Descriptive results

Our searches yielded a total of 820 references, out of which 16 articles fulfilled the inclusion criteria. This initial result suggests that empirical research focusing on the initiatives or approaches by citizens in their active role and their participation in the communicative process of health during the COVID-19 pandemic has received limited attention within the field of communication. An analysis of the authors' affiliation information indicates that most of the studies were conducted in China ( $n = 8$ ), followed by the United States ( $n = 2$ ) and Iran ( $n = 2$ ). Geographical distribution of the remaining studies is illustrated in Figure 2.

**Figure 2.**

*PRISMA flow diagram Geographical distribution*



**Source:** Own creation (2024).

Within the timeframe of our sample selection, the reviewed studies are predominantly from the year 2022 ( $n=7$ ), coinciding with the middle phase of the COVID-19 pandemic's evolution. This is followed by an almost equal distribution in the years 2021 ( $n=4$ ) and 2023 ( $n=4$ ). Only one study was published in the year 2020, which may reflect the novelty and emerging nature of COVID-19-related research at that time. The list of included studies, with their respective publication years, is presented in Table 1 below.



Table 1.

## Background information of samples

AUTHORS (Publication year)	ARTICLE TITLE AUTHOR KEYWORDS	SOURCE TITLE FUNDING	CITES
Tang, L. & Zou, W.X. (2021)	Health Information Consumption under COVID-19 Lockdown: An Interview Study of Residents of Hubei Province, China	Health Communication	42
Yang Y. & Su Y. (2020)	Public voice via social media: Role in cooperative governance during public health emergency  <i>cooperative governance; policy evolution; product innovation; public health emergency; public voice; social media</i>	International Journal of Environmental Research and Public Health  FUNDING: National Natural Science Foundation of China; Fundamental Research Funds for the Central Universities	22
Mhiripiri, N.A. & Midzi, R. (2021)	Fighting for survival: persons with disabilities' activism for the mediatisation of COVID-19 information  <i>ableism; access to information; activism; deaf and hard of hearing; disability media studies; health communication; lawsuits; persons living with disabilities; social model of disability</i>	Media International Australia	12
Jiang Q., Liu S., Hu, Y., & Xu J (2022)	Social Media for Health Campaign and Solidarity Among Chinese Fandom Publics During the COVID-19 Pandemic  <i>affordance; COVID-19 pandemic; face mask; fandom publics; public health; social media; solidarity</i>	Frontiers in Psychology  FUNDING: National Office for Philosophy and Social Sciences, NSSF; National Social Science Fund of China	7
Baniya, S.; & Chen, C. (2021)	Experiencing a Global Pandemic: The Power of Public Storytelling as Antenarrative in Crisis Communication  <i>storytelling; social justice; digital platforms; non-western; COVID-19 crisis</i>	Technical Communication	5
Marvi, A., Shahraini, S.M., Yazdi, N. et al.(2021)	Iran and COVID-19: A Bottom-up, Faith-Driven, Citizen-Supported Response  <i>bottom-up response to crisis; citizen-driven governance; civic engagement; crisis management; Disaster management; faith-driven engagement</i>	Public Organization Review	5
Kiasalar, M., Shokrkah, Y., & Namazi,H. (2022)	Action Research: The National Festival of CORONAREVAYAT (Corona Narrative) in Iran; An Experience Report and Analysis  <i>campaign; communication; Covid-19; documentation; health; media; pandemic</i>	International Journal of Body, Mind and Culture  FUNDING: Medical Council	4
Zhang, X.; & Chen, A.F. (2022)	The Multiplicity and Dynamics of Functional Crisis Memories in Crisis Communication: How Chinese Social Media Users Collectively Reconstructed SARS during COVID-19  <i>crisis communication; crisis memory; rhetorical arena theory; crisis and emergency risk communication (CERC) model; public health crisis; social media</i>	Journal of Public Relations Research  FUNDING: National Social Science Fund of China	4
Uekusa, S. (2023)	Overcoming disaster linguicism: using autoethnography during the COVID-19 pandemic in	Journal of Applied Communication Researrch	4

	Denmark to explore how community translators can provide multilingual disaster communication		
	<i>autoethnography; community translator; disaster communication; disaster linguicism; disaster risk reduction</i>		
<b>Xu, J.H., Guo, D.F., Xu, J., &amp; Luo, C. (2023)</b>	How Do Multiple Actors Conduct Science Communication About Omicron on Weibo: A Mixed-Method Study  <i>Covid-19; Omicron; public sentiment; science communication; social media; sentiment analysis; Weibo</i>	Media and Communication	2
		FUNDING: Innovation Centre for Digital Business and Capital Development of Beijing Technology and Business University and Key Laboratory of Big Data Analysis and Application in the Publishing Industry of the National Press and Publication Administration	
<b>Xie, L., &amp; Shao, M. (2022)</b>	The rejuvenation of urban community in China under COVID-19  <i>China; city; community governance; COVID-19; spontaneous groups</i>	Frontiers in Sustainable Cities	2
		FUNDING: University of Nottingham Ningbo China	
<b>Guo, Y., Hou, Y., Xiang, H., &amp; Chen, L. (2023)</b>	"Help Us!": a content analysis of COVID-19 help-seeking posts on Weibo during the first lockdown  <i>COVID-19; lockdown; online help-seeking; public engagement; social media</i>	BMC Public Health	1
		FUNDING: Government of the Macao Special Administrative Region Education and Youth Development Bureau; foundation for Macao Higher Education Institutions	
<b>Fafowora, B. L., &amp; Salaudeen, M. A. (2022)</b>	Nigerians and COVID-19 humour: Discursivity and public engagement through pandemic internet memes  <i>COVID-19; health communication; humour; memes; sarcasm; thematic analysis</i>	Journal of African Media Studies	1
<b>Wang, Y., &amp; Navarro Nicoletti, F. (2023)</b>	Entertainment Education and Citizens? Participation in COVID-19 Pandemic Response: A Case Study of Chinese Citizens on Social Media  <i>Chinese experience; citizen participation; COVID-19; crisis response; digital solidarity communication; entertainment education; social media</i>	Social Sciences	0
		FUNDING: Agencia Estatal de Investigación	
<b>Lungat, A. O. (2022)</b>	Data Sharing and Information Platforms in Crisis Response and Preparedness: Exploring the Role of Open Data Sharing Platforms and Collective Intelligence in COVID-19 Response Efforts, and Preparedness for Future Pandemics  <i>citizen engagement; collective intelligence; crowdsourcing; information sharing; internet freedom; mapping; open data; open-source software</i>	Digital Government: Research and Practice	0
<b>Piltch-Loeb, R. et al. (2023)</b>	What Were the Information Voids? A Qualitative Analysis of Questions Asked by Dear Pandemic Readers between August 2020-August 2021	Journal of Health Communication	0
		FUNDING: The Leverhulme Trust	

**Source:** Own creation (2024).

In regard to the journals where the studies are published, it can be concluded into seven areas, which are:

- Health Communication and Public Health, including: Health Communication, Journal of Health Communication, and BMC Public Health, and International Journal of Environmental Research and Public Health.
- Communication and Media Studies, including: Journal of Applied Communication Research, Media and Communication, Media International Australia and Journal of African Media Studies.
- Public Relations and Organizational Communication, including: Journal of Public Relations Research and Public Organization Review.
- Psychology and Behavioral Research, including: Frontiers in Psychology.
- Social Science and Cultural Studies, including: Social Sciences, and International Journal of Body, Mind and Culture.
- Environment and Sustainable Development, including: International Journal of Environmental Research and Public Health, and Frontiers in Sustainable Cities.
- Technology and Digital Studies, including: Technical Communication and Digital Government: Research and Practice.

Concerning the funding and support to conduct the research, studies with funding (n=9) do not show significant difference to those without funding (n=7). In relation to the funding source, it can be categorized into national research funds, local government or institutional funds, and university and its research center funds, as demonstrated in Table 2 below.

**Table 2.**

*Fundings sources of samples*

Type of funding source	Funds
<b>National Research Funds</b>	National Natural Science Foundation of China (NSFC)
	National Office for Philosophy and Social Sciences (NSSFC)
	National Social Science Fund of China
	Agencia Estatal de Investigación, AEI
<b>Local Government or Institutional Funds</b>	Local Government Education and Youth Development Organization
	Government of the Macao Special Administrative Region Education and Youth Development Bureau
<b>University Funds or Research Centers</b>	Medical Council
	Innovation Center for Digital Business and Capital Development of Beijing Technology and Business University
	Key Laboratory of Big Data Analysis and Application in the Publishing Industry of the National Press and Publication Administration
	University of Nottingham Ningbo China, UNNC
	Fundamental Research Funds for the Central Universities

**Source:** Own creation (2024).

Moreover, 111 citations have been gained in this body. The most cited study has 42 citations, followed by the second most cited study of 22 citations and the third most cited study of 12, compared to the studies cited less than ten (n= 10) and those without citation (n=3).

### *3.2 Tendency and research interests of theoretical focuses*

Upon examination of the titles and keywords from the studies in this review, a broad and varied spectrum of focuses concerning citizens' participation and civic engagement has been identified. Initially, the role of social media and digital platforms has garnered significant scholarly attention, especially in studies that adopt interdisciplinary approaches to civic engagement. These studies frequently converge on themes such as science communication,

crisis and disaster communication, information seeking and consumption, and disinformation concerns. Notable examples include works by Jiang *et al.* (2022), Lungati (2022), Piltch-Loeb *et al.* (2023), Xu *et al.* (2023), and Yang & Su (2020), which highlight the prominence of digital platforms in facilitating civic discourse and engagement during the pandemic.

In addition to the role of digital platforms, scholars have also focused on civic engagement from a collective perspective, examining practices such as collective memory, collective intelligence, and emotional and educational dimensions. For instance, studies have explored the use of humor and entertainment education, as well as storytelling in crisis, disaster, or risk communication, showed in contributions by Baniya and Chen (2021), Guo *et al.* (2023), Fafowora and Salaudeen (2022), Lungati (2022), Tang and Zou (2020), Wang and Navarro-Nicoletti (2023), and Zhang and Chen (2022).

Furthermore, research interests have also converged on the actions and cooperative efforts, or co-governance, by citizens. Scholars have shown a particular interest in areas such as cross-cultural communication, community and urban governance, rejuvenation of communities and urban areas, and the active contributions by citizens (Fafowora & Salaudeen, 2022; Kiasalar, *et al.*, 2022; Marvi, *et al.*, 2021; Uekusa, 2022; Wang & Navarro-Nicoletti, 2023; Xie & Shao, 2022).

Another important finding from the research focus within this body of studies pertains to the consideration of special groups, particularly individuals with disabilities (Mhiripiri & Midzi, 2020), and their access to information. This access is as crucial for these groups just as it is for other social groups, especially considering the communicative inequalities that are often intertwined with structural issues from economic, social, and cultural perspectives.

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Based on the summary provided, we proceeded to further investigate the theoretical frameworks underpinning the reviewed studies. The tendency of the theoretical standpoints suggests a robust interdisciplinary nature, indicating that the examination of civic engagement in the context of health communication is informed by a diverse array of theoretical perspectives.

When examining civic engagement and citizen participation, research interests are often framed or combined with key concepts such as social media use and its affordances, as well as information seeking and consumption—concepts that are frequently employed in this field. Other perspectives and focuses applied within this body of samples include disinformation, participatory action research or collective actions, social justice and inequality, digital technologies and data, and community and urban governance, which encompasses cooperative governance, self-organization, and volunteering.

Additionally, concepts and theories related to emotion and sentiment analysis, entertainment education, humor, narrative analysis such as storytelling, faith and crisis response, and cross-cultural and non-Western perspectives have been identified in the reviewed studies. These frameworks help to conceptualize and deepen the understanding of civic engagement, providing a nuanced understanding of the multifaceted nature of citizens' roles in communication processes.

### ***3.3 Employment of methods***

From a methodological standpoint, the predominant approach in the reviewed studies leans towards qualitative methods (n=9). These primarily include interviews, focus group discussions, grounded theory, document examination, participatory action research, thematic analysis, rhetorical analysis, social media analysis, and case studies.

Only two studies were identified utilizing quantitative methods, encompassing data analysis, statistical analysis, surveys, content analysis, social network analysis, and sentiment analysis. Additionally, five articles reported employing mixed methods studies.

In the case of Mhiripiri and Midzi (2020), the methodology's classification as either qualitative or quantitative analysis remains ambiguous. Based on the descriptions provided in the relevant sections of the article and the study's focus on documents and media outlets, we have assessed it as employing a content analysis method.

Specifically, within the qualitative research methods, a mixed-methods approach was most frequently identified in this body of samples, indicating a preference for combining qualitative insights with quantitative data to enrich the understanding of civic engagement at the communicative level.

For instance, Marvi *et al.* (2021) utilized a qualitative grounded theory (GT) methodology in their research, employing semi-structured interviews, document analysis, and attendance at related webinars to explore Iran's bottom-up response to crises. They conducted 26 in-depth interviews and an online survey that included over 120 individuals. Xie and Shao (2022) emphasized a mixed-methods approach, combining qualitative analysis of documents, social media, interviews, focus group discussions, and data collection to enrich their investigation.

When employing a mixed-methods approach, Xu *et al.* (2023) combined content analysis, social network analysis, and sentiment analysis to scrutinize the communication strategies and interactions of eight key actors on Weibo, a Chinese social media platform analogous to Twitter, as well as Instagram. Their study aimed to understand the dynamics of information dissemination and engagement on these platforms. Similarly, Zhang and Chen (2022) applied content analysis and network analysis in their research to delve into how Chinese social media users referenced and reshaped their collective memory of the SARS outbreak of the past within the context of the COVID-19 pandemic. They examined this as a crisis response strategy during the ongoing public health emergency.

Furthermore, certain methodological highlights in the reviewed studies merit being pointed out. In the research conducted by Kiasalar *et al.* (2022), the use of a participatory action research method distinguishes it from other qualitative approaches. The study focused on the CORONAREVAYAT festival, which involved collaboration with 28 national organizations from diverse social sectors. Additionally, the research utilized video calls for interviews with interdisciplinary teams of health and media experts. By adopting a public participation paradigm rather than an information dissemination model, the study aimed to mitigate the infodemic and reduce health anxiety during the pandemic.

Another distinctive methodology that warrants emphasis among the reviewed studies is presented in the work of Uekusa (2022), who utilized autoethnography (AE) as a qualitative research method. This approach was grounded in her personal role as a community translator and her experiences during the COVID-19 pandemic. Uekusa's study aimed to explore the contributions of community translators in facilitating multilingual communication as a disaster or crisis response strategy. The methodology employed critical self-reflection, observation, and interactions with the community, specifically as a transplant in Denmark during the public health crisis. This approach underscored the importance of inclusive, interactive, and multilingual disaster communication in addressing disaster linguisticism—a concept that highlights the language barriers which can impede effective communication during public health crises such as COVID-19.

In relation to the cases and samples, the majority are derived from social media and digital platforms associated with the projects under study. These include a variety of content types such as social media posts, digital stories, images, memes, podcasts, and readers' letters and questions. The study encompasses both Chinese social media platforms like Sina Weibo and Western platforms such as Facebook, Twitter, and Instagram. Additionally, institutional documents and content from televised media outlets have been examined.

As for the participants, the identified groups are diverse and include representatives from the public sector, such as government employees and members of governmental organizations; the private sector, including enterprise representatives; health professionals like public health experts and doctors; other professionals such as community translators and artists; individuals like local citizens and social media users; the third sector, including volunteers, and non-governmental organizations.

### 3.4 Findings

Taken as a whole, the studies cover a wide range of aspects from social media use, civic engagement, information acquisition and sharing behaviours, to how specific groups (e.g., people with disabilities) were included in public health communications. The findings emphasize the importance of civic engagement and effective communication during public health crises and the need for further research to improve crisis response strategies, which can serve for the future work.

From the perspective of Social Media's Role in Information Access and Health Communication:

- Jiang Q., Liu S., Hu Y, and Xu J. (2022) investigated the pivotal function of social media in driving health campaigns and psychological support. The research revealed that celebrity figures significantly influenced fan communities to engage in health-related hashtag campaigns. Social media functionalities, such as liking, commenting, and reposting, were identified as instrumental in fostering healthy behaviours and communal solidarity.
- Xu, J.H.; Guo, D.F., Xu, J., and Luo, C. (2023) dissected scientific communication on Weibo regarding the Omicron variant. Scientists were highlighted as paramount in disseminating objective scientific discourse, with central media playing a crucial intermediary role in conveying knowledge to the public, thereby positively swaying public sentiment.
- Tang, L. and Zou, W.X. (2021) explored media utilization by residents during a lockdown, emphasizing the reliance on official sources for information and a preference for private channels due to censorship concerns. The study underscored the dynamic nature of information needs and usage throughout the pandemic's progression.
- Guo, Y., Hou, Y., Xiang, H., & Chen, L. (2023) examined Weibo posts seeking assistance during the initial COVID-19 lockdown, identifying characteristics that garnered higher engagement levels, such as neutral tone and mixed narrative modes.
- Piltch-Loeb *et al.* (2023) recognized readers' need for clear guidance on health decisions, with a focus on vaccination, herd immunity, and mask usage.
- Lungati (2022) advocated for robust open data sharing platforms to address data sharing deficiencies, particularly in the health sector, by leveraging initiatives like Frena La Curva and Safecast.

From the perspective of Communication Needs and Social Action of Specific Groups:

- Kiasalar *et al.* (2022) conducted an in-depth examination of the CORONAREVAYAT festival as a case study in participatory action research. The research demonstrated the festival's success in engaging public participation and securing notable contributions from the realms of health professionals and the arts.
- The study revealed a marked preference among participants for sections that emphasized visual content over those focused on textual material. This finding underscores the relatively low public awareness and understanding of the health humanities concept. The achievements of the festival were found to suggest a valuable interdisciplinary strategy for health policymakers, particularly in low-income and middle-income countries. The integrated approach is posited as a means to confront the multifaceted challenges inherent in health policy and practice.
- Mhiripiri, N.A., and Midzi, R. (2021) assessed the barriers faced by individuals with disabilities in accessing COVID-19 health information and the subsequent legal actions taken by activist groups to ensure compliance with human rights and disability legislation.
- Uekusa, S. (2022) explored the critical role of community translators in facilitating multilingual disaster communication, emphasizing the necessity for a shift from top-down communication models to more inclusive and interactive approaches that respect the rights and experiences of indigenous, tribal, and minority groups.

From the perspective of Public Health and the Dynamics of Cooperative Governance:

- Yang and Su (2020) conducted an analysis of the health code policy and its interplay with collaborative citizen governance within the Chinese context. Their study uncovered that the expression of public voice is propelled by a causal chain adhering to the "stimulus-cognition-emotion-behaviour" model. This framework illustrates how policy stimuli incite public cognition, which in turn evokes emotional reactions, culminating in the manifestation of public voice behaviour. The research delineates the dichotomy of public voice into promotive and prohibitive forms, with positive emotions fostering a promotive voice and negative emotions engendering a prohibitive stance. Furthermore, the study elucidates the targets and classifications of public voice, identifying governments and enterprises as targets and categorizing the voice into promotive and prohibitive types.
- Marvi *et al.* (2021) scrutinized the supportive role of Iranian citizens in the nation's COVID-19 response efforts. The study's key findings accentuate the significance of civic engagement driven by faith, the potency of leadership and societal references in galvanizing public movements, and the alignment of civic engagement with government-led crisis management initiatives.
- Xie and Shao (2022) dissected the self-organizing actions within Shanghai's communities, substantiating the value and potential of civil society-led governance at the community level. This model is characterized by its less rigid institutional framework and enhanced organizational flexibility. The governance model underscores the involvement of diverse urban actors, including homeowners' associations and their affiliated property management companies, entities from the third sector, and spontaneously organizing individuals and groups.

From the perspective of Narrative and Collective Memory in Crisis Communication:

- Baniya, S., and Chen, C. (2021) conducted an exploration into the potency of public storytelling during crises. Their study posits that non-Western narrative approaches offer a rich vein of experiential knowledge that can enhance transcultural crisis communication and promote social justice. These narrative practices are advocated as a form of social justice, capable of conveying the socio-political and economic facets of a pandemic. The research highlights the creation of transnational and transcultural spaces that facilitate intersectional discourse and collective action, thereby challenging entrenched power structures and advocating for marginalized groups.
- Zhang and Chen (2022) performed an analysis on the collective reconstruction of SARS memories by social media users in response to the COVID-19 pandemic. The findings indicate that users on social media platforms actively constructed memories of the SARS outbreak to fulfil a spectrum of purposes. These included drawing historical analogies, commemorating and celebrating, providing temporal context, engaging in criticism and introspection, forming emotional connections, and serving directive functions. The study observed that the reconstruction of SARS memories by the public was more pronounced in the initial stages of the crisis, whereas governmental and media invocations of these memories peaked in subsequent stages.

From the perspective of Humor and Entertainment Education:

- Fafowora and Salaudeen (2022) evaluated Nigerians' humorous reactions to the pandemic through internet terrier charts. The study finds that memes portray a range of psychological responses to the pandemic, including fear, anxiety, and humor. They also highlight the impact of the pandemic on individuals and society, including the effects of lockdown, economic disparities, and political corruption. Additionally, the memes express skepticism and uncertainty about the existence and end of the pandemic. Humor was the main structure used in memes, as a platform for escapism and identifying societal responses and pandemic consequences. Sarcasm was employed to critically address societal issues (social inequity, infrastructural deficiencies, or corruption).
- Wang and Navarro-Nicoletti (2023) studied the entertainment education strategies for Chinese citizens using social media during COVID-19. The study highlights the importance of citizen participation in crisis response, particularly through social media, and its potential in promoting social change and education. It also emphasizes the need for alternative communication strategies that transcend traditional top-down approaches and instead focus on empowering citizens to share their experiences and perspectives.

## 4. Discussions

Based on the findings from the sample studies, the scholarly articles provide the public with a diversified and interdisciplinary view of research focuses and contributions in the field of health communication during the COVID-19 pandemic and how these findings can guide future research, policy development, and practice. On the other hand, we also took a reflection on the limitations of their research.



The most significant limitation, which indicates a gap for future research, is the lack of empirical studies of citizen's initiatives and practices as active participants in health and crisis communication. The practices analysed in the reviewed studies usually related and serve other research disciplines instead of the active agent in the health communication. In this sense, it shows the potential of depending on and theorizing this research focus in the health communication field.

Other limitations of the reviewed studies are related to: sample size and representativeness (some studies are based on small sample sizes that may not be representative of the general population or applicable in different cultural and social contexts); bias in data sources (most studies are based on data from specific social media platforms - e.g. Weibo - which may lead to a biased understanding of information dissemination and public response); methodological limitations (the review may focus on qualitative research, which may limit the ability to analyse a broader dataset and may lack the breadth of quantitative research); cultural and geographic specificity (some studies may focus on specific cultures or regions, which limits their global generalisability); temporal limitations (studies may be limited to data from a short, specific time period, which may not reflect trends or changes over time); censorship and control of information (when discussing the China study in particular, the authors mention the possible impact of censorship on information dissemination and public response); and targeting specific groups (some studies may have focused too much on specific groups - for example, people with disabilities - and have missed out on the potential impact of censorship on the dissemination of information and public response); and the targeting of specific groups (some studies may have focused too much on specific groups - e.g. disables people- and overlooked the experiences and perspectives of other groups.

In addition, the authors took a reflection on this systematic review itself, too, as limitations cannot be avoided in any research. This systematic review shares similar limitation to some of the reviewed studies regarding the sample size. From one hand, it implies the little attention it gains in the health communication. From the other hand, it may consider improving the searching strategy, for instance, employing data processing applications, and including more other academic publication databases. Moreover, in this systematic review only included journal articles, as relative studies also exist in grey literatures.

## 5. Conclusions

Integrating perspectives from Communication for Development and Social Change (CDCS) and positioning health communication as a subfield within social development is fundamental to deepening scholarly inquiry and fostering active citizen participation in the health sector. The studies analysed cover a range of topics, including the use of social media, civic engagement and the inclusion of specific groups in public health communications. They highlight the significance of effective communication and civic commitment during public health crises, underscoring the necessity for further research to refine response strategies.

Regarding social media, the research revealed that these platforms are essential for propelling health campaigns. Social media functionalities, such as "liking" and "sharing", encourage healthy behaviours and build community solidarity. Science communication via platforms like Weibo has proven to be efficacious, however, scientists and central media still play the leading role in disseminating objective information and positively influencing the populace. During the lockdown, citizens relied on official sources for information, although a preference for private channels was also observed, occasionally due to censorship concerns.

In terms of communication needs and social action, individuals with disabilities faced significant barriers in accessing health information. Community translators were essential for facilitating multilingual disaster communication, advocating for more inclusive approaches. Ultimately, in cooperative governance, the role of civic commitment and community self-organization was emphasized, underscoring the importance of organizational flexibility and the engagement of diverse actors in crisis management. Limitations within the analysed studies have been identified, and potential future research trajectories have been proposed.

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