The role of social media in public crisis governance

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Abstract. The characteristics of dissemination and universal application of social media bring new opportunities for multiple arenas (such as government, social institutions, and the public) to participate in the governance of public crises. During China's prevention and control of COVID-19, social media functioned well in the governance of the pandemic. This paper mainly analyzes the role of social media in crisis management from the perspectives of risk communication, social reconstruction, collaborative governance, etc., thereby providing the government with recommendations for the improved employment of social media and improving the public crisis response.

1 Introduction

Social media is computer-based technology that facilitates the creation and sharing of information, ideas, interests, and other forms of expression via the building of virtual communities and networks. At present, social media mainly includes social networking sites, Sina Weibo, WeChat, Blogs, Forums, Podcasts and platforms of that nature. Compared to traditional media, social media is characterized by immediacy, interactivity, connectivity, participation, etc., the public widely uses these forms of communication technology to share their views and real-time feelings on public issues and emergencies.

With the popularity of mobile terminals and the maturity of social media platforms, social media plays an increasingly crucial role in public safety governance. Government agencies in countries such as the United States, China, Singapore, and Australia all adopt social media as a tool of public crisis governance for alleviating crises during public emergencies. During China's prevention and control of COVID-19, social media has been employed throughout the entire course of the pandemic. Participants such as the government, the public, and social organizations have interacted and cooperated online via social media, highlighting the application value and social value of social media. Therefore, this paper focuses on studying the key role of social media in China's COVID-19 pandemic prevention and control as well as elaborating on its role from the perspectives of risk communication, social recovery, and collaborative governance, with the hope of providing recommendations for the government to use social media in a better way and improve the government's ability for public crisis governance.

2 Social media brings new opportunities for public crisis governance

Crisis governance refers to "the various ways in which many actors, individuals, and institutions deal with risks surrounded by uncertainty, complexity and/or ambiguity" [1]. COVID-19 is the most severe global pandemic in a century. Currently, the prevention and control protocols for COVID-19 show little optimism. The continuous spread and uncertainty of the pandemic have greatly challenged some countries' ability to handle social risk and crisis governance. For instance, China has had a tough time dealing with his pandemic, considered to be the major public health emergency with "the fastest spread, the widest range of infections, and the most difficulty in prevention and control since the founding of the People's Republic of China in 1949" [2].

In the prevention and control of this pandemic, social media represented by Sina Weibo and WeChat (platforms with advantages in having a higher dissemination speed and containing a large amount of information), provided platforms for all of society to fight against the pandemic. In such context, the social and application values of social media are apparent, with new media gradually becoming a vital part in China's social crisis governance. Table 1 describes some major features of social media suitable for public crisis governance.

Table 1. Features of social media suitable for public crisis governance.

Feature	Description
Immediacy	It allows for the real-time release of information and enables users to read, view, and forward content in real-time, so that the information can be spread rapidly.
Interactivity	Users can comment, forward information, and click "like" buttons.

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Convenience	Most social media platforms have mobile-based applications that allow users to be online at any time.
Low cost	Most social media platforms are free and open, where users can post information with no cost.
Openness	Participants' involvement is not restricted due to their demographic status. (e.g., nationality, gender, age, education level, etc.)
Extensive dissemination	It is a form of large-scale dissemination, which can accelerate information distribution.
Connectivity	It provides new ways for friends, family, and the whole world to keep in close contact.
Integration of geographic location and multimedia information	It can integrate additional information such as geographic location, video, photo, and audio to further enrich the information.
Participation	As long as there is network access, participants can receive and publish information anytime and anywhere.
Community	Small community groups can be easily created due to a certain characteristic, with close network contact among members.

These features provide opportunities and resources for risk communication, social mutual assistance and reconstruction, multi-subject collaborative governance, etc. in social crises, and offer new opportunities for crisis governance in modern society.

3 The positive role of social media in governing the pandemic crisis

The role of social media plays in the governance of the pandemic is largely due its characteristics and how it is capable of meeting the needs for public crisis governance. The COVID-19 pandemic is the first universal public crisis since China entered the era of mobile social media. Some scholars hold that social media not only influences the spread of public crises, but also serves as a powerful tool to be involved in public crises and play an active role in the governance process [3] [4].

3.1 Social Media Facilitates Risk Communication

In terms of risk communication, efficient discourse between different participants is an essential prerequisite for public crisis governance. After the outbreak of COVID-19, social media became a significant channel for risk communication due to its immediacy, interactivity, and extensive dissemination, all of which have played a role in promoting discourse interaction and communication efficiency among different participants.

First, the application of social media helps to promote the interaction of views among multiple entities. The whole process of COVID-19 prevention and control, social media platforms provide opportunities for exchanges and dialogues between different participants, so that different opinions, viewpoints, and demands can be presented. For instance, during the COVID-19 pandemic, the public expressed their opinions on the Chinese government's crisis governance policies and measures via social media (e.g., the lockdown of Wuhan, Zhong Nanshan confirming that the virus was transmissible among humans, Wuhan's newly built Huoshenshan [Fire God Mountain] and Leishenshan [Thunder God Mountain] Hospitals). All these topics aroused a great deal of public

attention and heated discussions. On the other hand, the government also used social media to understand public opinions and demand, monitor the public's knowledge and understanding of COVID-19, and respond to public concerns in a timely manner. A typical example is the "digital divide" issues facing older adults during the pandemic; the government stated that it was necessary to adopt intelligent management and service measures suitable for older citizens, and issued "Implementation Plan on Effectively Solving the Difficulties of the Elderly in Using Intelligent Technology" on November 24, 2020 [5]. In addition, scientists, medical experts, and popular science workers interpreted the pandemic in plain language and interacted or engaged in discussions with the public, demonstrating more rational power for the prevention and control of the pandemic. Mainstream media focused on the front line of the pandemic, employed various channels to release the latest information, and made follow-up reports on social hotspots and contradictions. Many pandemic-related reports presented with professionalism and objectivism attracted extensive attention from the government and all walks of life, reflecting the mainstream media's public service value.

Second, the application of social media helps to improve the communication efficiency among different participants. Researchers generally believe that effective dissemination of information plays a critical role in solving public crises. The immediacy and openness of social media reduces the levels of information transmission, achieves top-down information synchronization, and thus improves the efficiency of information communication. After the outbreak of the COVID-19 pandemic in China, the national, provincial, prefectural, and county government social media accounts adopted an information release linkage mechanism and achieved rapid and accurate release of information via various release channels, such as government official accounts on Weibo and WeChat. In particular, the Chinese government used texts, pictures, videos, and live broadcasts to release details about the pandemic situation, pandemic prevention knowledge, policies and regulations, as well as other messages via mainstream social media forms 24-hours a day, around-the-clock. This was done so that regular citizens could obtain knowledge about COVID-19, the pandemic situation, and specific protective suggestions in a timely fashion. Statistics show that information regarding the pandemic situation and interpretation of pandemic prevention knowledge by authoritative experts was effectively spread through the public relay [4]. The dissemination effect was found to increase exponentially, thereby affecting the public's perceptions and actions towards the pandemic, improving the public's prevention awareness and risk cognition, and alleviating panic attacks.

3.2 Social Media Promotes Social Recovery in Crisis

The simultaneous development of crisis response and social recovery can minimize losses and create a healthy social environment for public crisis governance. After the

COVID-19 crisis broke out, social media played a major contributing role in social rescue, life reconstruction, and psychological reconstruction, and demonstrated positive public welfare power and social value.

First, social media gathered all forces in society together, serving as a prominent channel for organizing social health response forces. As the first area to face the sudden health epidemic, affected areas throughout Hubei province experienced difficulties in seeking medical treatment and was affronted with a shortage of medical treatment and living supplies. Social media quickly became an intermediary for transmitting information about health care needs, thereby providing connections with responders and protective equipment. This resulted in social media having a significant social value in the COVID-19 response. For example, the Fighting COVID-19 Material Seeking Platform and Pneumonia Patients Seeking Help Zone (launched by Sina Weibo) alleviated the shortage of medical supplies in 557 hospitals across 251 cities. Furthermore, over 3,000 valid messages were verified (amongst the tens of thousands of requests for help from patients), thus saving the lives of some patients experiencing severe COVID-19 presentations. Sina micro-charity platform was also used to release information regarding charity relief donations, material bequests, and volunteer recruitment. As a result, the Hubei Provincial Red Cross Foundation was able to achieve their fundraising goal of 1.5 million RMB within 50 minutes, providing a strong demonstration of united social power during under the pandemic. Additional direct connections were also established via WeChat by social organizations and the warm-hearted public to help hospitals and people in key epidemic areas.

Second, social media was extensively involved in popular social autonomy, community management, and people's livelihood services, serving as a channel for re-stabilizing social order. During the pandemic prevention and control, some communities used official WeChat accounts to publicize knowledge on the pandemic prevention and control, issue notices, and to launch special services such as poverty relief, elderly care services, and online recruitment. Some organized volunteer teams offered services such as purchasing daily necessities for people with disabilities and disinfecting public areas via WeChat and QQ groups. Some communities even used newly developed WeChat mini programs (e.g., anti-discrimination dissemination actions, community delivery package sorting), to solve practical life problems faced by residents under special conditions. Others adopted remote offices, online education, tele-medicine, and other online platforms for work, life and study, effectively re-stabilizing social order.

Third, in a time of extreme isolation and social distancing, social media extended interpersonal relationships and made it easier for people in distress to feel more closely connected with others. The global state of emergency and high-rate of COVID-19 transmission and infection aggravated the public's anxiety and increased panic. Facing an increase in mental health risks as a result of the pandemic, people established and maintained connections through various social media outlets, allowing them to express concerns mutually rather than alone. A survey showed that people preferred to share information they considered useful via social media during the pandemic. By doing so, people felt they were doing something useful and experienced a sense of warmth and support from others' "likes" and feedback [6]. In addition to the emotional connections established by the public, some mainstream media outlets also used social media to calm the public's emotions and promptly disseminate positive stories and heart-warming activities, thus enhancing people's confidence and determination in overcoming the pandemic. For example, on the 28th day of Wuhan's lockdown, Xin Shixiang (a popular WeChat account) and China Daily's New Media Department launched a Good Night Messages Plan for people in Central China's Hubei province. With encouraging goodnight messages from strangers, the isolated people of Hubei felt the power of love and gained a greater sense of security. Some citizens also commented that social media helped people in distress feel more intimately connected with others, creating a new collective emotional power.

3.3 Social Media Promotes the Transformation of Crisis Governance Models

Public crisis governance generally requires the participation and coordination of multiple societal arenas, such as governments, enterprises, communities, and individuals. In reality, however, it is possible to form a single governance model, which separates the connection between the government and other governance subjects. During the COVID-19 pandemic, social media provided efficient channels for all sectors of society to participate in crisis governance and promoted the transformation of the established single governance model to a social coordination- and digital-prioritized governance model.

First, social media promotes the transformation of a single governance model to a social collaborative governance model. After the outbreak of the pandemic, the immediacy, openness, and connectivity of social media enabled all sectors of society to participate in risk relief in a timely and effective manner. Some social organizations and the public spontaneously raised and donated medical and living supplies to those in need shortly after learning about the supply shortage through social media. With their own credibility, mainstream media such as China Central Television and Xinhua News Agency cooperated with government departments to expediently refute rumors, so as to gradually control the spread of rumors. Some professional psychological institutions or groups also offered the public online services (e.g., psychological self-tests, heart-warming radio stations, mindful meditation) to help people manage psychological and mental health issues arising from the pandemic [7] [8]. Some medical institutions even provided online services (e.g., free consultation, medication purchases) to help people solve problems related to not receiving medical treatment in time. Collectively, it is apparent that social media participation promotes collaboration amongst all participants, allowing different domains to complement one another and thereby forming a collaborative governance.

Second, social media promotes the transition from a single governance model to a digital model. On the one hand, with the support of big data, the content and carriers of social media communication continuously broke through traditional application scenarios. Some social media platforms cooperated with technology companies and medical institutions to launch a pandemic area in which to provide practical services such as online medical consultation, pandemic maps, risk level assessment, and inquiries for confirmed patients with the same itinerary. This provided support for the formation of accurate and efficient prevention circumstances and control of the pandemic. On the other hand, the application of 5G technology permitted great progress for live broadcasts and allowed for extensive use. For example, academic Zhong Nanshan used 5G video remote connection to host consultations for five critical patients. Moreover, hundreds of millions of netizens were able to watch the Huoshenshan and Leishenshan Hospital construction sites clearly and smoothly through a live broadcast on the cloud, commenting and interacting in real time. These breakthrough application scenarios demonstrate the possibilities of social governance for pandemic prevention and control by social media outlets through the use of big data, artificial intelligence, and 5G technology to explore and practice a new model of "technology + cooperation" for crisis governance.

In summary, social media platforms has built bridges between multiple entities (such as the government, public, and social institutions) with respect to crisis governance throughout the COVID-19 pandemic. Considerable contributions have also been made towards refining risk communication, promoting social recovery, driving coordinated governance, reaching a risk consensus, gathering forces from all corners of the society, and exploring a governance model of "technology + cooperation" during times of crisis, becoming the "Opinion Interaction Center", "Collaboration Center" and "Power Gathering Center" .

4 Conclusion and discussion

This article focuses on the positive role of social media for crisis governance during COVID-19 outbreak in China, yet, the application of social media also presents with a series of challenges. First, social media does contain a great deal of false information, leading to challenges in social rumor control. Second, the "infodemic" (i.e., excessive amount of information about a problem) on social media can easily bias the public's information choices and perceptions, thus hampering the effective public health response. Third, public opinions expressed on social media are vague, irresponsible and haphazard sometimes, which may improperly influence the government's rational decision-making. Finally, the government and major enterprises use big data technology to collect and track personal information to combat the pandemic, temporarily sidelining some privacy regulations resulting in challenges for the mishandling, abuse, or leak of confidential information.

Therefore, when using social media to deal with public crises, the government and all sectors of society must be knowledgeable about, and pay more attention to, the opportunities and challenges that social media brings to public crisis governance; the negative effects of social media and applicable countermeasures should also be studied and analyzed further, so as to respond resiliently to various complicated challenges during crises.

Funding

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