

Adopting Social Media for Improving Health: Opportunities and Challenges

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Social media's ubiquitous influence is changing the landscape of health-related practices. Health organizations and individuals continue to utilize social media for health with mixed results. We discuss current perspectives and challenges of using social media for improving health outcomes. We conclude this paper by highlighting five specific areas that warrant further investigation to better harness social media for health.

A growing body of literature has illustrated the successful use of social media for health, yet the implementation has been relatively lagging. Health organizations—including public health agencies, health research organizations, health care providers/services, and policy-makers—have a variety of responsibilities ranging from health information dissemination, disease/crisis surveillance, and accessibility of quality health care to alignment of public health policy and practice. In recent years, social media has increasingly become a part of our daily life. In our study, we use the term social media broadly, to include various platforms that allow electronic communication with social components (eg, Twitter, Reddit, Instagram, Facebook). Social media's ubiquitous influence is changing the landscape of health-related practices, and recent use as a platform for health information dissemination is one example [1]. Social media platforms allow users to generate and share content, and social media is altering modes of health information exchange and changing how individuals are searching for and dispersing health information. To fully capitalize on social media's potential, burgeoning research has focused on effective utilization [2, 3], yet many of these strategies are not fully adopted by health organizations. In addition to the aforementioned practices, social media has the potential to forecast outbreaks [4], amplify community outreach [5], and track and characterize public opinion [6]. The purpose of this article is to present the current perspectives and challenges of using social media for improving health; we also highlight future directions that may help health organizations to develop policies and practices.

Current Practices

Traditionally, health-related data were collected and disseminated through face-to-face and paper-based meth-

ods. However, social-media-based information collection and dissemination methods are more cost-efficient and allow health organizations to reach a larger population [7]. Additionally, different types of health information are shared online for various purposes. Individuals generate and share their own health-related experiences [8], such as surgery process, medication experience, and treatment plan. Health care professionals use social media to interact with patients to improve social support and health education [9]. These practices are now changing our perception of the quality of online health information access and sources; 61% of American adults look online for health information and 37% have accessed user-generated health information online [10]. One criticism of using social media for health has been the difficulty of reaching older populations, who may need more medical attention but may have less access. However, social media has been increasingly adopted by adults 65 and older [11]. This trend allows health practitioners to reach multiple population groups through social media. Given the widespread use of social media for health, public health governmental institutions are adopting the trend.

A growing number of public health governmental institutions have accounts on major social media platforms and use them as the primary channel to broadcast information [1]. This practice is not yet fully adopted, but it could have a profound effect on serving public health needs by reaching a wider audience with proper information. A prime example is during a time of crisis. Crisis informatics (also referred to as disaster informatics) examines behaviors before, during, and after crisis events. From the perspective of public health, the increase in social media usage provides the ability to conduct socio-behavioral analysis and allows for a quicker response to expected and unexpected crisis-related public health concerns. We have seen key historical examples in the last decade. The US Centers for Disease Control and Prevention (CDC) and Department of Health & Human Services disseminated information through social media to

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the general public during the H1N1 Flu pandemic in 2009 [12, 13]. The South Carolina 1,000-year flood in 2015 provides numerous examples of how social media was used to address various public health concerns both during and after the event [14, 15].

Current Practice Within North Carolina

State-focused research for North Carolina regarding social media usage is largely either missing or not reported in the literature. Though many individuals are likely accessing health information originating from outside North Carolina on social media, an understanding of what initiatives and strategies are operating with success within the state will help identify areas for intervention.

The North Carolina Division of Public Health has an active Twitter account, but its YouTube channel is less frequently updated, while no other social media accounts are found on its official website. This is in line with a national study of state health departments, in which about 87% have Twitter accounts and far fewer have Facebook and YouTube [1]; state health departments also have few interactions with users as they mostly post to disseminate information [1]. County level public health departments vary in their presence, with many having little to no departmental-level social media accounts despite operating some program-specific social media pages. For example, the Mecklenburg County Health Department does not have social media of its own, but its program “Working Toward Wellness” has a Facebook page [16].

Aside from governmental agencies, many North Carolina health organizations (for example Atrium Health) have social media accounts to share health information, post about events, and raise awareness about services. Clinics and practices may raise awareness about health issues and promote their services. Health researchers also share health information through personal accounts as well as through accounts run by institutions of higher education and research agencies, such as FHI 360 (also known as Family Health International).

Individuals are also an important source of health information on social media in North Carolina, as they tend to share experience-based knowledge on health services and/or products. Given disparities in both technology accessibility and health literacy in rural versus urban areas, different socioeconomic levels, and racial and ethnic groups in North Carolina [17, 18], evidence-based health messages through social media may not be reaching those needing them the most. Although the adoption of social media by health organizations is complementing the existing traditional health information communication, there are other unexplored opportunities.

Other Opportunities

The general benefits of health communication via social media include “increased interactions with others, more

available, shared, and tailored information, increased accessibility and widening access to health information, peer/social/emotional support, public health surveillance, and potential to influence health policy” [19]. Communication via social media could vastly improve the health literacy problem, which has been suggested as a major challenge even when information is widely accessible through the internet [20]. To improve health literacy, health organizations are adopting social media as a means to facilitate further communication. For example, health organizations have started to provide information about health services available at local health departments [21] and promote health education [9]. Similarly, social media can be used to amplify community outreach. For example, the American Sexual Health Association created a social video to encourage young people to test for sexually transmitted infections [5].

Social media can also establish virtual social environments that generate opportunities for people to learn, discuss, and connect around a particular health topic, which can also lead to improved health literacy. Social media removes the barriers of access to influential health care stakeholders at the local, state, and national level. In return, public health researchers and practitioners have the opportunity to better regulate misconceptions and provide evidence-based knowledge to the general public. Social media bodes well for the subsequent exchanging of credible health information sources both through text and media. Although social media can be used to improve health outcomes, social media for health should be used carefully.

Challenges

Social media allows individuals to enhance their understanding of health by sharing health information, experience-based opinions, and health-related current events. Some users are credentialed experts, including the aforementioned researchers, as well as providers. Others are activists, paid influencers, or just concerned lay persons. Though the information they share is not currently consistently evidence-based, individuals represent a strong voice.

While social media provides fast information dissemination and near-instantaneous reach to the general public, misinformation and disinformation also infiltrate and proliferate on health-related social media. Misinformation is inaccurate information, whereas disinformation is misinformation spread with the intent to deceive the audience [22]. Mis/disinformation has created unnecessary confusion, anxiety, fear, and frustration in society, which negatively impacts and intervenes with health agencies’ mission to disseminate accurate, reliable, and up-to-date health-related information. Social media health messaging that is inaccurate has physical and mental health impacts. This can be especially problematic during public health crises and emergencies [23]. One of the most prominent examples of fast and wide spread of health mis/disinformation on social media was witnessed during the 2016 Zika outbreak,

especially on Facebook and Twitter [24, 25].

Mis/disinformation on social media about a particular health-related topic may be expressed through several controversial and oppressive views on social media. For example, Zika has been associated with politics, sexism, racism, pro-life and pro-choice beliefs, genetically modified organisms, and conspiracy theories about the origin of the disease (eg, claiming it is a bio-weapon) [26, 27]. The potential societal implications necessitate quickly and accurately identifying mis/disinformation on social media, educating the general public to improve health literacy, and to develop more effective and efficient strategies of disseminating the relevant information. Agencies such as the CDC used social media to disseminate useful information about Zika in 2016. However, the CDC's communication about Zika lost momentum later in the year, while mis/disinformation continued to spread [26]. This example points to the importance of examining communication across time, as the effects are not cross-sectional. Other limitations of social media for health include lack of reliability and quality concerns, lack of confidentiality and privacy, information overload, and uncertainty about applying online information to a unique situation, among others [19].

Future Directions

Social media has substantial potential to improve health outcomes, although careful and thoughtful utilization is needed to do this effectively. To conclude this paper, we highlight five areas that warrant further investigation to better harness social media for enhancing health.

First, social media has the potential to enhance the communication between individuals and public health agencies, yet it is currently used primarily as an amplifier of information dissemination. Despite the interactive nature of social media, the current practices lack the support for thoughtful engagement with the general public. Through using Kietzmann and colleagues' seven building blocks of social media (identity, conversations, sharing, presence, relationships, reputation, and groups), it may be possible to identify opportunities for improvement in health organizations' social media presence [28].

Second, social media content for health information dissemination should be developed through a well-defined process. Concerns of source credibility, the accuracy of source information, and the authoritative voice behind the information can be addressed through better social media communication.

Third, as individuals on social media gain more influence over other users, better understanding of the role of individuals and of consumer knowledge concerning health information is needed. Capitalizing on individual-level channels might mean offering training for determining validity of health evidence, targeted interventions toward influencers, and social media best practices for health change.

Fourth, the effects of various types of social media

(eg, text, image, video) on electronic health literacy are still largely understudied, partially due to the ongoing changes in social media trends. As social media increasingly includes multiple media, messaging becomes more dynamic. For instance, an image's meaning may be changed through the use of hashtags and captions. Analyses of these mixed media messages are still limited.

Fifth, other scientific challenges such as demanding computational resources, considering artificial intelligence bias, redefining statistical significance of massive datasets, and preventing exploitation of users need to be better understood and accounted for in practice. Funding influences some of the demand and availability of resources. Historically, training in these types of statistical analyses has been limited.

As the use of social media becomes more prevalent and as health organizations start to incorporate it into health practice, the discussion of the positive and negative consequences is imperative. We believe this examination is timely and appropriate for health practitioners and policymakers to improve health outcomes. We conclude that the trend of social media usage will continue in the foreseeable future and establishing standards of practice within the scope of social media is needed. NCMJ

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