Social Media in the Times of COVID-19

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Over the last decade, social media has come to influence human lives in a manner that is unprecedented in its scale and magnitude. Of course, medicine has not been left untouched from its impact. In this extraordinary once-in-a-generation situation of a global lockdown that has redefined and obfuscated international borders, at the same time, the curtailment of physical mobility has led a heretofore upwardly mobile, ambitious generation of home-bound individuals to rediscover social media platforms (SMPs) with an even greater vengeance. Donning innovative roles, social media has captured new horizons and has come to play a central role in continued medical education, dissemination of scientific information, peer review, online discussions, and many more during the current pandemic (Figure).[1]

A literature search on MEDLINE and Scopus databases, using terms "social media" and "COVID-19," yields nearly 100 publications that have appeared in the space of the last 4 months. For the purpose of this review, relevant articles were chosen, and the data pooled to gain insight into the prevalent practices. Written permissions were obtained from the editors of the *Journal of Clinical Rheumatology* to analyze and publish their social media data.

While most articles discussed the role of SMPs in the dissemination of information, a significant proportion (17/57 [30%]) expressed concern regarding the potential for misinformation.[2,3] Another 36.8% were original articles, of which 6 were e-surveys and 15 data mining-based studies, most of which dealt with the prediction of the pandemic, with extrapolations drawn by geolocation linked social media messages with a time-sensitive model.[4,5] A few referred to social media networks such the Diabetes UK for providing useful patient-related information and infographics for visually simulative learning among physicians.[6]

ROLE OF SOCIAL MEDIA PLATFORMS IN THE DISSEMINATION OF INFORMATION

Amid social distancing protocols, health care workers (HCWs) and medical students are using SMPs to access scientific literature.[7,8] In the current pandemic, it has been noticed that although recommendations do not come with a use-by date, many guidelines appear to have an extremely short half-life. As their contribution, numerous journals have provided open access to COVID-19 articles. In contrast, others have announced special supplements dedicated to the situation, and authors clamor to upload preprints not only for early visibility but also wider dissemination.[9,10] The COVID-19 Open Research Dataset is an open data set floated by a coalition between federal and research organizations to meet the challenge of rapid accelerations in COVID-19 literature.[11] While Twitter has emerged as a global SMP of choice, use is also dependent on regional preference. Hence, in India, WhatsApp is accepted, but in China, WeChat may be more popular.[12–15] The Twitter account of *Journal of Clinical Rheumatology* (@Jrheumatology) has recorded a 72.0% rise in tweet impressions and 95.4% increase in profile visits over the past month. Various strategies have been used for exponential dissemination of literature to the target audience, and infographics circulated on SMPs have found instant acceptance.[15,16]

DISTANCE LEARNING

In the words of Moran, "the process of teaching and learning mediated by technologies, where teachers and students are separated spatially and/or temporally" is the best conceptualization of distance education.[17] Distance education has been used effectively for focused training of HCWs, volunteers, and also the community. Many federal agencies have used these platforms to train health care providers to improve surge capacity.[18] Training undergraduate medical students and educated volunteers are being explored.[19] Community preparedness to deal with a fomite and droplet borne disease can have far-reaching advantages. Mass education may be effective through portals such as Twitter and YouTube, but it may also be challenging to change people's preconceptions or political biases.[1]

REMOTE MONITORING AND HEALTH CARE

Over the last decade, health care monitoring and delivery have become increasingly distant, often the provider and the recipient have been separated not only in space but also in time. Mobile technology, coupled with the internet of things, has revolutionized monitoring and therapy. Today, with rapid cellular networks and widespread smartphone usage, the exchange of medical images and reports, has become routine.[20] Telemedicine had come a long way from the time when an electrocardiogram was first transmitted over telephone lines.[21] It could reduce in-person visits by 25% to 75% across specialties, including rheumatology.[22–24] Virtual consulting has reduced mortality and length of hospital stay even in critical care settings.[25] In developed countries with an established infrastructure, linking the app-based services with the hospital information services could provide a reliable record base of future reference as soon as logistics to resolve legal and insurance issues are developed.[26] Ironically, with the advent of COVID-19, some of the most ardent critics of telemedicine have adopted e-consultations and begun accepting patient-reported outcome measures. Consequently, government agencies in developing countries are recognizing and legitimizing remote health care delivery and virtual consultation.[27] Community paramedicine or mobile-integrated health care programs using smartphone app-based trackers may transform health care delivery.[28]

However, recent events of technological failure with Zoom calls throw light on the vulnerabilities of a poor electronic construct. This domain merits improvisation in the times to come, especially as they handle sensitive information such as patient data

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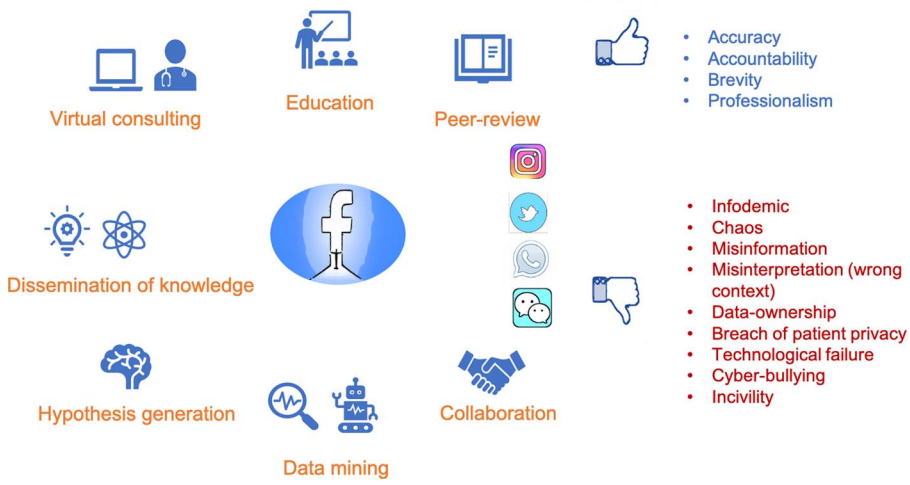

FIGURE. Social media—utility and pitfalls. Color online-figure is available at http://www.jclinrheum.com.

during e-consults. Although video conferencing may be more expensive in terms of equipment procurement, the patient-related cost in terms of time, transport, and the risk of COVID-19 can be mitigating factors.[29] Notwithstanding the advances in health care technology, providers and recipients need to be equally mindful of blurring patient-physician relationships, opportunities for traps related to claims, malpractice, quackery, and false litigations.[30]

RESEARCH ON SOCIAL MEDIA PLATFORMS

The integration of online SMPs not only has made research more exciting but also has increased the reach of investigators manifold. Social media platforms may evolve into useful tools to gather survey information from wider, although still often biased, audiences.[31,32] Opinion-based surveys can be the first step toward an evidence base to guide more structured studies.[7] The Global Rheumatology Alliance has rapidly generated comprehensive data amid widespread concerns over the use of immunosuppressants.[33,34]

Artificial intelligence–mediated data-mining tools are being used to synthesize information out of social media discussions relevant to the pandemic.[5,35] The use of geocoded and time-stamped tweets to develop prediction models in real time holds potential as a guiding resource for federal agencies, pending further validation. Social media can aid in containment of the COVID-19 pandemic, as well-planned analyses of online exchanges may provide for rapid assessment of the spread of the disease.[5]

LIMITATIONS OF SOCIAL MEDIA: POTENTIAL FOR MISINFORMATION

The greatest strength of SMPs is also their principal limitation. Because information is widely accessible and immediately available, it may also not be immediately reliable. Information constructs based on flawed hypotheses can easily find their way to a naive audience through an unregulated maze, resulting in the establishment of many myths before facts can be presented. Health care providers making clinical decisions need to be trained in quickly surfing through a haystack to find the needle.[3,36,37]

Not only have the authors been caught in a rush to publish, but the journals have also been trapped. Consequently, established peer-review processes may be impaired, and low-quality studies may find their way into high-impact journals, gaining a wider, and undeserved, audience. Incivility and cyberbullying have been another bane of free social media access.[38,39] Human psychology experiments have suggested that the knowledge of being monitored may restore cognitive self-awareness of asocial behavior.[40] Thus, policing of social media posts may help pull the brakes on exaggerated intuitive and emotional responses. Although unethical promotion of scientific misinformation for economic gains amounts to serious professional misconduct, there is often no penalty.[41,42] Lamentably, this pandemic has exposed our world to a series of threats, and moral failure may be one of the most damaging ones.[43,44]

MEDICAL JOURNALS AND SOCIAL MEDIA

Medical journals have evolved rapidly over the last few decades and have transformed into gatekeepers and possibly trendsetters for current research. As the newest frontier, social media holds exciting opportunities and unforeseen challenges for both authors and editors alike. However, with the advantage comes the responsibility of a much larger reach to the public.

Rheumatologists and Immunologists have found themselves uniquely endowed with viral pathogenic and therapeutic insights as well as the skill-set to manage a critical illness.[45] The artistry of this jack-of-all-trades among physicians can find utility in identifying valid evidence. This would be the first step toward going through reams of scientific information with the intent to verify and subsequently curate and deliver it to the right audience. Academicians, in general, and social media editors (SMEs), in particular, can assume this more substantial role of infodemic warriors in these times of scientific and moral failure amid plenty.

To date, 17 rheumatology journals have SMEs and Twitter accounts.[1] Collaborative networks between official journal accounts can have a rapid and powerful social media presence with wide dissemination of credible information.[13,46] Scientific societies at the local, national, and international levels can be approached to inform and direct subscribers to follow these networks. It might be prudent to embark on the challenging task of creating separate platforms for HCWs and patients to avoid mass panic from adverse scientific observations. This may be particularly important as social media may potentially be the invincible force soon.

The challenge and responsibility for an important role can incentivize SMEs toward handling the delicate synthesis of scientific literature on COVID-19 and correspondences on them. Creating alliances can reduce the burden on individual SMEs, whereas COVID-19 clinical duties keep them busy. Bots and automatic algorithms may come in handy for performing scheduled and unscheduled checks as well as sending reminders on the rules,

including, but not limited to, forbidden personal opinions and biased statements on official platforms. For infographics and images, mandatory checks on copyright violations before circulation on social media could be the domain of SMEs. Lastly, didactic communication, such as journal clubs on Twitter, can facilitate crowd engagement on open-source platforms. These could be prioritized, hopefully replacing popular beliefs with definite answers. In such times, the academician community needs to come together for a powerful and credible social media presence.

In conclusion, social networks have become central to the rapid dissemination of scientific information and for administrative pandemic monitoring and control. Medical journals have promptly espoused online discussions, peer review, and scholarly collaboration to allow SMPs to attain a formidable medical research position despite initial limitations. In collaborative social media networks lies the potential to lead the way forward by delivering valid scientific observations in an organized manner to the appropriate audience.

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