Social media in the era of COVID-19

Niti R Aggarwal,1 Mirvat Alasnag,2 Mamas A Mamas3

SOCIAL MEDIA IN THE ERA OF THE UNKNOWN
The SARS-CoV-2, COVID-19 pandemic has been likened to a war-like state against an invisible enemy in which healthcare workers (HCW) are metaphorical frontline soldiers, overwhelmed by patient numbers, ventilator shortages and rationing of personal protective equipment (PPE). Little was initially known about the virus, its clinical course, treatment strategies or how to organise healthcare systems to meet this challenge.

Over the last few years, social media (SoMe) platforms have gradually gained popularity in cardiology as a means of sharing clinical experiences, disseminating new knowledge, curating content, research collaborations and patient advocacy.1 The cardiology community faces many challenges in the COVID-19 pandemic: patients with cardiovascular disease have the greatest risk of mortality with COVID-19 infection, up to 28% of COVID-19 cases have cardiovascular involvement, cardiac complications of potential drugs under investigation and delayed cardiac care for patients not presenting to hospitals for fear of being exposed to COVID-19.2–5 Furthermore, provision of cardiovascular care places HCW at elevated risk of serving as a host or vector of viral transmission.3 During this pandemic, SoMe platforms are well poised to meet many of the challenges faced by the cardiovascular community owing to their ability to facilitate the hosting of multimedia content, global reach and providing the means for real-time interactions. They have played a pivotal role in creating a sense of comradery, disseminating knowledge, recruitment and collaboration for research, coordinating a response, and advocacy pertaining to COVID-19.(figure 1)

CREATING SHARED COMMITMENT AND SENSE OF COMRADERY
At the onset of the pandemic, HCW struggled to reconcile their professional commitment to provision of healthcare to the sickest patients in the face of personal danger, limited clinical resources and frustration over inadequate PPEs. While intense emotions of dealing with life and death are not new for cardiologists, the pandemic adds additional stressors of inadequate supplies, risk to life, the need to maintain physical distance from their families, while providing emotional support to patients due to no visitor policies. There are anxieties about being deployed into environments that are unfamiliar, working beyond areas of expertise and comfort zone. These unique stressors may not be appreciated by those outside of medicine. Additionally, many HCW were reluctant to share these sentiments within their hospitals for fear of judgement by colleagues, or conflict with their administration. HCW of different demographics and cultures in separate continents experience the same challenges, frustrations and fears, and have been brought together and empowered by SoMe in unprecedented ways. HCW feel comfortable candidly voicing their experiences, frustrations and opinions on SoMe. Some do so in closed forums through web-based meetings and chat forums by invitation only; others through public outlets such as Twitter and Facebook. HCW collectively devised potential solutions to overcome the risk of exposing their families. A Facebook group called ‘RVs 4 MDs’ facilitated American HCW to rent recreational vehicles to self-isolate outside their homes.6 Through SoMe, the traditional support network of an individual’s friends, families and work colleagues was expanded to include a global network of frontline staff experiencing similar challenges and sentiments. Validation of frustrations and recognition that these stressors are uniformly shared across the world is empowering. Collectively uplifting each other from afar, they shared global videos of public singing and applauding of HCW, motivational quotes and images, and success stories of patients’ recovering.

During World War I, the term ‘happy hour’ was coined to denote time blocks on ships where sailors could engage in relaxing activities to shield themselves from drudgeries of war.7 A century later, unable to entertain in person due to the social distancing restraints,
clinicians have adapted the same euphuism on SoMe platforms to create a surge of ‘virtual happy hours’ and ‘COVID-19-free zones’ where people go to decompress, a form of momentary escapism from the pandemic. These sessions have created unique bonds reigniting the spirit of siblinghood among cardiologists and with other clinicians.

EDUCATION

The biggest challenge encountered by clinicians during the COVID-19 pandemic was their limited experience in dealing with such a pandemic, compounded by the limited evidence base with no guidelines or textbooks to reference around optimal treatment strategies, management and clinical outcomes. This made it pivotal to rapidly learn from each other’s experiences across the world, and also find a means to rapidly disseminate new institutional policies and guidelines, particularly as cardiologists got deployed into unfamiliar clinical environments including emergency rooms and intensive care units. HCW quickly shared their clinical cases, research and management strategies through multimedia content including tweets, tutorials, webinars and infographics, sharing educational resources in real time beyond the silos of subspecialties across the globe. Clinicians promptly shared their experiences regarding thrombotic manifestations of COVID-19, risk stratification with D-dimer, treatment consideration in patients on ACE inhibitors, cardiac toxicities associated with hydroxychloroquine, and management of acute coronary syndromes in patients with COVID-19, and particularly how to differentiate myocarditis associated with COVID-19 infection from ST elevation myocardial infarction. Cardiologists worldwide collectively contributed to the plethora of clinical cases highlighting the cardiac imaging findings of COVID-19, thereby resulting in a remarkable array of knowledge, as well as cath lab protocols for the management of ACS cases. SoMe was advantaged over the traditional venues for communication namely emails, conference call, departmental meetings and grand rounds by its speed, virtual interface and freedom from geographical and specialty boundaries. Intersocietal guidelines and consensus statements were created on cardiac manifestation and management of COVID-19, and protocols for performing cardio-pulmonary resuscitation, coronary angiography, electrophysiology procedures and cardiac imaging during the health crisis. While still published by traditional journals and highlighted by webinars, the power of SoMe was harnessed to facilitate rapid dissemination of these guidelines by hashtags, tweetorials, WhatsApp groups and Instagram feeds. Through SoMe, individual minds and experiences convalesced together into a unified and formidable knowledge bank at an unprecedented pace.

RECRUITMENT AND CULTIVATION OF RESEARCH

During the pandemic, SoMe served as a powerful tool to advertise, recruit and collaborate on various research endeavours. SoMe allowed for development of collaborative networks globally among cardiologists with shared interests, who may have never met. For example, global acute coronary syndrome COVID-19 registries have been developed and shared over SoMe. Additionally, many clinical trials advertised on SoMe for widespread reach to potential study participants. For instance, there were calls to donate convalescent serum from recovered patients for the ongoing trial at multiple institutions. The ColCorona trial, a multicentre study to study the efficacy of colchicine in patients infected with COVID-19 recruited through SoMe. Similarly, the American Heart Association also announced the launch of a novel registry to organise and aggregate COVID-19 cases to better elucidate risk factor profiles and treatment algorithms on Twitter.

Additionally, influencers on SoMe served as facilitators to deliver investigational drugs to sick patients. For example, through Twitter, an influential cardiologist reached out to thousands of followers, and was able to expedite delivery of remdesivir to a COVID-19 patient within 6 hours of his tweet. SoMe was also instrumental in rapid sharing of published studies in journals and preprinted manuscripts from websites such as MedRXIV.org to exponentially improve their reach.

A CALL TO ACTION AND COORDINATION

The COVID-19 pandemic has overwhelmed healthcare systems across the globe, with infection of HCW resulting in staffing crises that compound the challenges of treating unprecedented numbers of patients. SoMe has served as an important platform to drive the recruitment of current and retired HCW to meet this staffing crisis. After calls on SoMe, HCW from different parts of Italy flew to Lombardy to assist, retired clinicians volunteered to rejoin the work force in Illinois, New York and United Kingdom, and those unable to travel helped through telemedicine. Additionally, early adopters of telehealth shared their initial experiences and guidance on coding and optimisation through roundtables, webinars and conferences including emails, conference call, departmental meetings and grand rounds by its speed, virtual interface and freedom from geographical and specialty boundaries. Intersocietal guidelines and consensus statements were created on cardiac manifestation and management of COVID-19, and protocols for performing cardio-pulmonary resuscitation, coronary angiography, electrophysiology procedures and cardiac imaging during the health crisis. While still published by traditional journals and highlighted by webinars, the power of SoMe was harnessed to facilitate rapid dissemination of these guidelines by hashtags, tweetorials, WhatsApp groups and Instagram feeds. Through SoMe, individual minds and experiences convalesced together into a unified and formidable knowledge bank at an unprecedented pace.

RECRUITMENT AND CULTIVATION OF RESEARCH

During the pandemic, SoMe served as a powerful tool to advertise, recruit and collaborate on various research endeavours. SoMe allowed for development of collaborative networks globally among cardiologists with shared interests, who may have never met. For example, global acute coronary syndrome COVID-19 registries have been developed and shared over SoMe. Additionally, many clinical trials advertised on SoMe for widespread reach to potential study participants. For instance, there were calls to donate convalescent serum from recovered patients for the ongoing trial at multiple institutions. The ColCorona trial, a multicentre study to study the efficacy of colchicine in patients infected with COVID-19 recruited through SoMe. Similarly, the American Heart Association also announced the launch of a novel registry to organise and aggregate COVID-19 cases to better elucidate risk factor profiles and treatment algorithms on Twitter.

Additionally, influencers on SoMe served as facilitators to deliver investigational drugs to sick patients. For example, through Twitter, an influential cardiologist reached out to thousands of followers, and was able to expedite delivery of remdesivir to a COVID-19 patient within 6 hours of his tweet. SoMe was also instrumental in rapid sharing of published studies in journals and preprinted manuscripts from websites such as MedRXIV.org to exponentially improve their reach.

A CALL TO ACTION AND COORDINATION

The COVID-19 pandemic has overwhelmed healthcare systems across the globe, with infection of HCW resulting in staffing crises that compound the challenges of treating unprecedented numbers of patients. SoMe has served as an important platform to drive the recruitment of current and retired HCW to meet this staffing crisis. After calls on SoMe, HCW from different parts of Italy flew to Lombardy to assist, retired clinicians volunteered to rejoin the work force in Illinois, New York and United Kingdom, and those unable to travel helped through telemedicine. Additionally, early adopters of telehealth shared their initial experiences and guidance on coding and optimisation through roundtables, webinars and conferences including tweets, tutorials, webinars and infographics, sharing educational resources in real time beyond the silos of subspecialties across the globe. Clinicians promptly shared their experiences regarding thrombotic manifestations of COVID-19, risk stratification with D-dimer, treatment consideration in patients on ACE inhibitors, cardiac toxicities associated with hydroxychloroquine, and management of acute coronary syndromes in patients with COVID-19, and particularly how to differentiate myocarditis associated with COVID-19 infection from ST elevation myocardial infarction. Cardiologists worldwide collectively contributed to the plethora of clinical cases highlighting the cardiac imaging findings of COVID-19, thereby resulting in a remarkable array of knowledge, as well as cath lab protocols for the management of ACS cases. SoMe was advantaged over the traditional venues for communication namely emails, conference call, departmental meetings and grand rounds by its speed, virtual interface and freedom from geographical and specialty boundaries. Intersocietal guidelines and consensus statements were created on cardiac manifestation and management of COVID-19, and protocols for performing cardio-pulmonary resuscitation, coronary angiography, electrophysiology procedures and cardiac imaging during the health crisis. While still published by traditional journals and highlighted by webinars, the power of SoMe was harnessed to facilitate rapid dissemination of these guidelines by hashtags, tweetorials, WhatsApp groups and Instagram feeds. Through SoMe, individual minds and experiences convalesced together into a unified and formidable knowledge bank at an unprecedented pace.

RECRUITMENT AND CULTIVATION OF RESEARCH

During the pandemic, SoMe served as a powerful tool to advertise, recruit and collaborate on various research endeavours. SoMe allowed for development of collaborative networks globally among cardiologists with shared interests, who may have never met. For example, global acute coronary syndrome COVID-19 registries have been developed and shared over SoMe. Additionally, many clinical trials advertised on SoMe for widespread reach to potential study participants. For instance, there were calls to donate convalescent serum from recovered patients for the ongoing trial at multiple institutions. The ColCorona trial, a multicentre study to study the efficacy of colchicine in patients infected with COVID-19 recruited through SoMe. Similarly, the American Heart Association also announced the launch of a novel registry to organise and aggregate COVID-19 cases to better elucidate risk factor profiles and treatment algorithms on Twitter.

Additionally, influencers on SoMe served as facilitators to deliver investigational drugs to sick patients. For example, through Twitter, an influential cardiologist reached out to thousands of followers, and was able to expedite delivery of remdesivir to a COVID-19 patient within 6 hours of his tweet. SoMe was also instrumental in rapid sharing of published studies in journals and preprinted manuscripts from websites such as MedRXIV.org to exponentially improve their reach.
tweets on SoMe platforms as many cardiologists shifted their outpatient practices to seeing patients virtually during the period of lock down.

Furthermore, several SoMe outlets were used to connect healthcare centres to people with engineering and 3D printing resources and expertise to temporarily overcome global shortages of medical equipment and PPEs particularly in Europe and USA. Automakers partnered with bioprinting sectors to produce ventilators and Bipap machines, and other in-demand medical equipment. Similarly, digital manufacturers mass produced ventilator valves and connectors to allow multiple patients to be connected to one ventilator, and nasal swabs for testing in response to call from hospitals. Twitter hashtags #GetMePPE and #GetUsPPE have helped raise visibility of the dire PPE shortages. Technology pioneers and manufacturers collaborated via SoMe to bioprint face masks, safety goggles, block shields that can be used as protection during intubation, hands-free door handle attachments, and wrist claps to hold sanitizer bottles for easy access, as stop gap measures to decrease transmission while traditional manufacturers ramp up production.

**PUBLIC EDUCATION AND ADVOCACY**

In the absence of evidence-based therapies and vaccination programmes to eradicate COVID-19, an effective strategy that limits the spread of COVID-19 remains prevention via social distancing, and rigorous handwashing. Traditional venues of public education such as advertisement on billboards, circulation of flyers and dissemination through faith-based organisations were hampered by the physical distancing restrictions. In contrast, SoMe platforms provided the means to amplify such public health messages through posts, tweets, videos and infographics urging the public to maintain good hand hygiene, not touch their face, avoid crowds and stay home. Many cardiologists reverted to SoMe platforms to educate both the public and physicians on cardiac risks of taking hydroxychloroquine. Similarly, many cardiologists highlighted the perils of staying home following a myocardial infarction, and shared the CardioSmart infographics with their Twitter followers.

Advocacy groups were no longer constraint by their individual subspecialties, and instead cardiology groups joined forces with other specialty advocacy groups to campaign for common goals. SoMe platforms encouraged clinicians to share stories and sign letters to lawmakers advocating for improved access to PPEs, increase rapid widespread testing for COVID-19, reduce reimbursement barriers to telehealth and petitions to improve care for mental health.

In conclusion, SoMe, augmented the traditional venues of communication, and served as a successful means to curate and disseminate knowledge, empower HCW into action, facilitate recruitment, foster collaboration and facilitate advocacy virtually across the global sphere in real time.

**REFERENCES**

8. Shematologist MD. “While others argue it is simply a hypercoagulable state 2/2 increased inflammation. The link btw thrombosis and inflammation is well described and COVID continues to add support to this phenomenon. One of the first pieces of evidence to support DIC comes from Tang, et al. (Wuhan) 2/n,” 2020. Available: https://twitter.com/acweyand/status/1254269726760591360
9. Eric Topol (@EricTopol). “We don’t know if H + A (hydroxychloroquine + azithromycin) works vs #COVID19. But we know that combo –→ risk for serious heart rhythm disturbances. Now @nyulangone’s @extrastim et al assessed this in 84 patients treated. Many had a disturbing QTC increased > 40 ms. Available: https://www.medrxiv.org/content/10.1101/2020.04.02.20047505v1.full.pdf+

April 3, 2020, 1:39 PM. Tweet https://twitter.com/EricTopol/status/124614519173695488
10. Tuttle M. “S/p primary PCI, Much has been made on #cardiotwitter about the lack of reciprocal changes differentiating #Covid19 myocarditis from true STEMI, but this case highlights that heuristic isn’t perfect.”, 2020.


16 Gershlick T. "COVIDACSGLOBALREGISTRY is live! Contact mail@covidacsglobalregistry.com if you wish to contribute to our understanding. We will then send you link to the Registry webase. We will share final data. Great work Uni Glasgow and Leicester. @SVRaoMD @GreggWStone @mmamas1973 @DLBHATTMD" March 28, 2020. Available: https://twitter.com/agershlick/status/1243939117483921409

17 Mayo Clinic Department of Anesthesiology. "Mayo Clinic is asking all staff who have recovered from the COVID-19 virus to donate plasma. This plasma will be rich in antibodies and can be used to treat patients who are hospitalized with COVID-19"; 2020.

18 Tardif J-C, “COLCORONA- at home study recruiting in LA, San Francisco, Miami, Houston, Dallas & NYC. Diagnosed with #covid19 and over 40 years of age? You may be eligible to participate. It’s free and may prevent worsening of illness and complications, 2020. Available: https://twitter.com/jctardif_mhi/status/1290697448143196163

19 Cardiology Today. @American_Heart announced it is developing a novel registry for the organization and aggregation of data, research, treatment protocols for #COVID19 and risk factors tied to related adverse CV outcomes; 2020.

20 Yang F. @CMichaelGibson you are THE MAN. Thanks so much for helping out! Just heard from their end. And thanks everyone else on this twitter feed. This is modern medicine fueled by social media at its best!!!", 2020.

21 American College of Cardiology. "@DrAnkitKPatel discusses the use of #telehealth in cardiology practice in the #Covid19 era during today’s Telehealth Roundtable. #ACCEOd", 2020. Available: https://twitter.com/ACCinTouch/status/1278681085006807042


23 Gulati M. “Right now on #TCTMDCovid19 we are discussion about the impact of #COVID19 is having on delayed presentations for #STEMI to hospitals globally for fear of acquiring the infection. Out outreach and public education in USA from @ACCinTouch @CardioSmart.". Available: https://twitter.com/DrMarthaGulati/status/125405870332347297