

# Survey of Social Media Use for Surgical Education During Covid-19

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## ABSTRACT

**Objective:** To evaluate the use of social media platforms by medical students, surgical trainees, and practicing surgeons for surgical education during the Covid-19 pandemic.

**Methods:** An online, 15-question survey was developed and posted on Facebook and WhatsApp closed surgeon groups.

**Results:** The online survey was completed by 219 participants from South America (87%), North America (7%), Europe (5%), Central America, and Asia. Respondents included medical students (6.4%), surgical residents/fellows (24.2%), and practicing surgeons (69.4%). The most common age group was 35–44 years. When asked which social media

platforms they preferred, the video sharing site YouTube (33.3%), the messaging app WhatsApp (21%), and “other” (including videoconferencing sites) (22.3%) were most popular. Respondents reported using social media for surgical education either daily (38.4%) or weekly (45.2%), for an average of 1–5 hours/week. Most (85%) opined that surgical conferences that were cancelled during the pandemic should be made available online, with live discussions.

**Conclusion:** Social media use for surgical education during Covid-19 appears to be increasing and evolving.

**Key Words:** Social media, Surgical education, Medical education, Medical students, Resident, Virtual learning, Covid-19, Pandemic.

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Disclosure: none.

Funding/Financial support: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflicts of interest: The authors declare no conflict of interest.

Informed consent: Dr. Laurentino Lima declares that written informed consent was obtained from the participants for publication of this study/report and any accompanying images.

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DOI: 10.4293/JSLs.2020.00072

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## BACKGROUND

The COVID-19 pandemic has resulted in rapid and profound disruptions in human interaction, economic security, and health. Healthcare delivery systems have found it necessary to respond in unprecedented ways.<sup>1</sup> Medical schools and surgical trainee programs have not been spared. Medical student clerkships, observerships, and electives have been suspended.<sup>2</sup> Residents have been transitioned from surgical rotations to pandemic-related service activities (emergency medicine, intensive care) and required off time (quarantine) at home.<sup>2</sup> The reluctance of hospital systems and educators to expose students and surgical trainees is effecting their education.

During this global crisis, social media platforms have played a prominent role. The first reports of human disease caused by SARS-CoV-2 were social media posts in Wuhan China by Dr. Ai Fen and Dr. Li Wenliang.<sup>3,4</sup> Social media platforms have been used widely throughout this pandemic to rapidly disseminate international observations, epidemiologic updates, clinical results, evolving treatment protocols, and other Covid-related information.<sup>5</sup> Even though real-time, widespread dissemination of information comes with trade-offs, social media’s dynamic way of communicating has made it very

popular during the Covid-19 pandemic. It is also seeing increased utilization for surgical education.<sup>6</sup>

Surgical education has embraced a variety of social media platforms: LinkedIn (2003), Facebook (2004), YouTube (2005-6), Twitter (2006), WhatsApp (2009), Instagram (2010), Doximity (2011), and others, incorporating real-time discussions and advice, live presentations, archived educational content, and rapid dissemination of manuscripts, including preprint versions during Covid. YouTube has become quite popular for sharing surgical videos, and WhatsApp for conversations. Twitter has been a very popular microblogging platform, allowing surgical societies and individual surgeons to share short text messages, pictures, and links worldwide.<sup>7, 8</sup> The social networking site Facebook has provided a mechanism for healthcare professionals to share their experiences and discussions in restricted “closed groups”. The International Hernia Collaboration, Robotic Surgery Collaboration, SAGES (Society of American Gastrointestinal and Endoscopic Surgeons), colorectal surgeons, and others have leveraged closed Facebook groups to accumulate clinical and research data, to engage in discussions and share advice, and to post manuscripts, lectures, and difficult surgical cases.<sup>7,9</sup> With easy accessibility, global reach, time zone independence, and low cost, social media platforms have becoming an increasingly useful tool for surgical education.<sup>10</sup>

During the COVID-19 pandemic, another phenomenon has driven social media use to new levels. With the temporary closure of medical schools and the restrictions on elective (nontime sensitive) surgical cases and clinics, surgeons, residents, and medical students are looking for ways to redirect and optimize their available time. They are spending more time exploring online resources for learning. Surgeons are increasingly joining live webinars and lectures via social media platforms. Also, professional medical associations (PMA), which have found it necessary to cancel their annual scientific meetings due to the pandemic are, in unprecedented numbers, providing online versions of their scientific meetings at little or no cost to learners.

In order to better understand the expanding use of social media platforms for surgical education during the early months of the Covid-19 pandemic, an online survey was conducted.

## METHODS

### Survey Design and Validation

A 15-item online questionnaire probed the specifics of social media use for surgical education during the Covid-

19 pandemic was created using a professional survey software (SurveyMonkey, San Mateo, CA, USA). The questions were created in the English language by two authors (RL and DL) and edited by two other authors (DB and FM). Before sending the survey, four surgeons tested the survey and further changes were performed in some questions to avoid ambiguity. The CHERRIES checklist (a checklist for reporting results of internet e-surveys and ensure quality of the study) was followed.<sup>11</sup> Participants were previously informed about who the investigators were, the total estimated time to complete the survey, the aims of the study, and the number of questions on the questionnaire. Every page had only one question and the participants could change their answers while doing it.

### Participants

This questionnaire was posted on Facebook groups: Robotic Surgery Collaboration, Mini Friends, International Hernia Collaboration, and also closed surgical groups on WhatsApp. The survey did not allow more than one entry per respondent. All responses were protected from unauthorized access by password.

An institutional review board (IRB) approval was not required. This study did not involve human subject research or protected health information, and institutional review board approval was not required. Responses to the survey were accepted from 14 May to 16 May 2020. Statistical analysis of survey results was descriptive.

## RESULTS

The online survey was completed by 219 participants from South America (87%), North America (7%), Europe (5%), Central America, and Asia. Respondents included medical students (60.4%), surgical residents and fellows (240.2%), and practicing surgeons (690.4%). Most were male (700.3%). The most common age group was 35–44 years (**Table 1**).

When asked *if* they were employing social media platforms to watch surgical lectures or to engage in surgical discussions during the pandemic, 900.9% (n=199) responded yes. When asked *how often* they were using social media for surgical education during Covid, 380.4% (n=84) responded daily and another 450.2% (n=99) answered weekly. About half of respondents (44%, n=96) reported spending 1–5 hours per week engaged in surgical education via social media.

**Table 1.**  
Sociodemographic Data of Survey Respondents

Gender	%	n
Male	70.3	154
Female	29.7	65
Age		
18–24	3.6	8
25–34	21	46
35–44	35.6	78
45–54	18.2	40
55–64	15.5	34
65+	5.9	13
Training status		
PGY 1	2.3	5
PGY 2	5	11
PGY 3	4.1	9
PGY 4	4.1	9
PGY 5	4.1	9
Fellowship	4.5	10
Fully trained	69.4	152
Medical Student	6.4	14
Continent		
South America	86.7	190
North America	6.8	15
Central America	1.4	3
Europe	4.6	10
Asia	0.5	1

When asked *which specific social media platforms* they preferred during this time, the video sharing site YouTube (330.3%), the messaging app WhatsApp (21%), and “other” (220.3%) were most popular (**Table 2**). The category “other” included videoconferencing services (Zoom, WebEx, Skype, Google Meetings, and GoToMeeting) and PMA websites for academic discourse. Most respondents (840.5%) opined that surgical conferences that were cancelled during the pandemic should be made available online. Also, 850.3% answered that it is extremely or very important to include live discussions. About ¾ of survey respondents answered that these discussions should address both Covid-19 and non-Covid surgical topics. Regarding Covid-19, the most highly sought after topics were strategies for safely returning to surgical activities during Covid-19 (score 4.86), research projects and protocols

**Table 2.**  
Preferred Social Media Platforms for Surgical Education. “Other” Includes Videoconferencing Platforms (Zoom, Google Meetings, WebEx, GoToMeeting) and Professional Medical Association (PMA) Websites

	%	n
YouTube	33.3	73
Other (webinars)	22.4	49
WhatsApp	21	46
Instagram	13.7	30
Facebook	8.7	19
LinkedIn	1	2
<b>Total</b>	<b>100</b>	<b>219</b>

regarding Covid-19, and surgery in the post-Covid era (**Table 3**).

Regarding *which type of online formats* they felt served best for surgical education, responders overwhelmingly preferred live webinars with chat (680.5%). Live webinars with chat allow real time interactions between audience members, moderators, and speakers. Streaming videos (170.3%), “Lives on Instagram” (60.4%), and other formats were less popular.

## DISCUSSION

Prior to the Covid-19 pandemic, social media use was already mainstream, with 69% of US adults using it as of Nov 2016.<sup>6</sup> About 90% of medical students and 40% of practicing physicians/surgeons were using social media.<sup>7</sup> Real-time discussions with rapid feedback, convenient transfer of audiovisual content (videos and pictures) and

**Table 3.**  
Educational Topics Considered the Most Relevant for Surgical Education During Covid-19

	Score (1–6)
Strategies to return to surgical activities	4.8
Info about surgical research projects and protocols	3.8
Surgery in the post Covid era	3.7
How surgical resident training is going to be done	3.3
The virus and the physiopathology in surgery	2.9
About the COVID-19 pandemic but not related to surgery	2.4

website links, and global reach have already made social media quite popular among surgeons, residents, and medical students. Social media has been particularly useful in facilitating greater access to surgical education across the world.<sup>8</sup> A systematic review (2013) found that these tools were associated with improved knowledge (examination scores), attitude (empathy), and skill (reflective writing).<sup>6</sup> Also, a recent consensus summary promoted even greater academic use of social media platforms for surgical research, including #SoMe4Surgery (Social Media for Surgery).<sup>8</sup> Although the effectiveness of social media use for surgical education is still being established, its acceptance and use during Covid-19 appears to be reaching unprecedented levels.<sup>2</sup>

The biggest limitation of employing social media for surgical/medical education is the lack of peer-review and content control. Users must carefully evaluate who is providing the information and the quality of the information provided. Recommendations for care should be approached with an appropriate measure of skepticism, an analysis of the quality of evidence behind the recommendations, and an appreciation of potential biases and errors.<sup>9</sup> Regarding surgical videos uploaded on YouTube, whereas these are both popular and useful for trainees and others, the content accuracy of such videos remains a matter of concern.<sup>12,13</sup> For example, studies of laparoscopic cholecystectomy videos posted online revealed that most of the videos failed to demonstrate the critical view of safety.<sup>12,13</sup> Because it remains difficult to regulate the accuracy of surgical videos and other surgical content online, it is important to educate our surgical trainees and medical students about how to access the best, most scientifically sound online resources.<sup>13</sup> PMAs, surgical educators, and social media groups are endeavoring to improve social media content and to minimize the spread of misinformation, but further improvements are needed.

One possibility to educate trainees and medical students is to encourage them to search only for online sources sponsored by official and recognized surgical societies. Furthermore, they should be aware of predatory events and journals that charge a great amount of money with no relevant benefit for their education. They should always investigate who is going to give those lectures and their backgrounds.

The inherent limitations of our cross sectional, descriptive study are attributed to the modality of distribution. The survey was sent through social media surgical groups. As such, it was not possible to calculate the response rate. Furthermore, our sample is small (n = 219), which does

not allow us to generalize our results. We may have a selection bias: participants that answered our survey may be more comfortable with completing e-surveys and technologies.

## CONCLUSION

The Covid-19 pandemic has resulted in rapid and profound disruptions in social interaction, healthcare delivery, and surgical education. During this global crisis, social media platforms have found a prominent role. In this online survey of 219 medical students, residents, and practicing surgeons, almost 90% reported utilizing social media for surgical education either daily or weekly, for an average of 1–5 hours per week. They most prefer the video sharing site YouTube, the messaging app WhatsApp, and live videoconferencing sites. Respondents also want to see cancelled surgical conferences replaced with online meetings, and they prefer live webinars with chat more than archived material. Although we are still early in the Covid-19 pandemic, an increasing and evolving use of social media for surgical education appears to be part of our new status quo.

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