An analysis of current trends in multimedia platform usage and surgery

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Abstract
The past few years have seen a significant increase in social media use amongst surgeons/surgical trainees across various subspecialties. In this paper, we argue that social media can positively impact the field as it serves as a platform for furthering education and important social movements. That being said, physicians and educators must be aware of the shortcomings it poses as well. These include threats to professionalism, privacy, and quality of information.

Background
As of 2019, there are 3.48 billion social media users globally, with a yearly increase of 9%.\(^1\) Social media can be defined as “an online-mediated technology that facilitates the creation and sharing of information, ideas and other forms of expression via virtual communities and networks.”\(^2\) A broader definition of social media can be taken to include modalities such as podcasts, tablet apps, and blogs.

While a majority of people use social media for networking amongst friends, sharing media, and staying on top of current trends,\(^3\) a substantial amount of people have started to use social media for professional purposes. This is especially true amongst certain surgical subspecialties. In a 2012 national survey, the number of U.S. plastic surgeons using social media for professional purposes almost doubled from 28.2% in 2010 to 50.4% in 2012.\(^4\)\(^-\)\(^5\) A similar increase was seen in U.K. colorectal surgeons during the years 2013–2016,\(^6\) and even amongst neurosurgeons with 70% of neurosurgeons across the U.S. reporting social media use for professional purposes in 2017.\(^7\)

The rise in social media use amongst surgical trainees and surgeons can be seen to positively impact the field in the sense that it can help with knowledge dissemination, patient engagement, and the erosion of harmful stereotypes. That being said, surgeons should be aware of the potential for harm as well, which includes threats to professionalism and the potential to adversely impact public perception.

Trends in education and social justice
Social media can greatly assist in the dissemination of knowledge to surgeons, surgical trainees, and the general public given the widespread reach that the internet has.\(^8\)-\(^10\) The presence of platforms, such as ResearchGate and Twitter, have made information readily accessible to users. Surgical journals that have social media accounts have significantly higher outreach and engagement rates than journals that do not.\(^11\) Information is even distributed in more informal ways such as “Tweetorials,” which take the form of short explanations of tricky medical/surgical concepts.\(^12\) It seems that surgical trainees have been quick to pick up on this, with a 2016 study finding that general surgery residents who were Twitter participants increased their board examination percentile scores by 13.7% on average. One hundred percent of these users also reported that daily microblogging prompted them to engage in academic reading.\(^13\)

While traditionally, surgical education was only available to those financially and geographically privileged, social media has the potential to increase access to education for those working in resource poor settings globally. This is a major leap forward from traditional publication methods, which involve considerable financial commitment and minimal scope for interaction. It is important to note that social media does not only provide access to educational resources to surgeons, but to patients as well. These are often accessible and in real time, such as Facebook Live Q&A discussions.\(^14\)

In addition, there is now considerable advancement in interactive multimedia social media platforms, which play a prominent role in surgical training. Platforms like YouTube contain a plethora of videos with surgeons narrating various surgical procedures. Virtual reality platforms, such as Medical Realities, are often integrated with social media platforms to promote access.\(^15\) A growing body of literature suggests that virtual reality has enormous potential to enhance technical surgical skills outside of the operating room in a safe, low-risk manner.\(^16\)

Social media can also serve as a catalyst for other progressive, social-based initiatives in surgery. Recently, it has been used as a platform to tackle age-old and harmful stereotypes by highlighting the increasing diversity of the surgical profession. The hashtag #ILookLikeASurgeon, in reference to women in surgery being misidentified, went viral on Twitter with more than 128 million impressions and roughly 40,000 tweets.\(^17\) Addressing harmful stereotypes is an important step towards breaking down barriers to diversity in surgical practice. Studies have shown that up to 91% of practicing women in surgery have experienced some form of gender-based discrimination.\(^18\) Female surgeons report being frequently mistaken for other types of hospital employees. The lack of representation for women and minorities amongst surgical specialties continues to intimidate and distance qualified applicants from pursuing these careers. Additionally, showcasing this diversity to patients would make diverse patient populations more comfortable when accepting care.

Threats to professionalism, confidentiality, and quality of information
Professionalism in surgery is essential for surgical practice, patient care, and maintaining public trust. A rise in online social media use has resulted in breaches in professionalism and patient confidentiality.
in medical communities. A national survey of American medical schools documented instances of unprofessional content posted online by medical students and residents, often in legal violation. They found that 13% of the cases involved a direct breach in patient confidentiality and that schools may not have adequate policies to address such online postings. These lapses of judgment may be especially prone to happen in surgical subspecialties such as cosmetic surgery, where the sharing of outcomes may involve identifiable visual information. Given the nature of various social media platforms, such as Facebook, patients now have access to the personal information of their physicians as well, resulting in professional lines being blurred. Again, instances range from a “friend request” putting a physician in an awkward situation, or a physician being stalked and even assaulted through information gained from social media.

With an increased use of social media for the purpose of medical education, there is also an increased risk for the spread of misinformation. Given the unregulated nature of many social media sites, there is a greater potential for the circulation of poor-quality information. This can pose harm to patients who engage with social media for health purposes. Additionally, social media tends to highlight individual experiences that may be anecdotal, which might not be representative of collective, evidence-based knowledge.

**Conclusion**

With billions of users worldwide, social media has revolutionized the way people communicate and consume information. Given the pervasiveness and considerable benefits of social media, it is imperative that medicine and surgery adapt accordingly. Moving forward, surgical programs should consider providing social media and interactive multimedia training sessions for residents and staff to increase proficiency in these platforms. Rather than avoiding social media due to fear of unprofessional behaviour or threats to privacy, medical students, residents, and physicians should be educated about confidentiality, social media regulations, and boundaries. With technology advancing at an exponential rate, the medical community needs to embrace social media and utilize the enormous potential that it has.

**Conflict of interest**

The authors have declared no conflict of interest.

**References**