

# Global Impact of Social Media on Women in Surgery

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The professional use of social media is increasingly prevalent today, particularly in medicine and surgery. Several recent movements have highlighted the strengths of this forum for networking and mentorship for females in surgery who otherwise may lack mentors locally. We sought to describe modern uses for and strengths of social media for women in surgery globally *via* a systematic review of the literature. Multiple efforts and avenues have promoted gender equality in surgery, while also uniting female surgeons in a collaborative virtual network of colleagues. In particular, movements on Twitter, such as #ILookLikeASurgeon and #NYerORCoverChallenge, as well as other collaborative virtual fora have brought visibility to female surgeons, while drawing the young population of students and trainees toward surgical careers. Social media provides a unique opportunity for female trainees and established surgeons alike to network and establish mentorship relationships, which may aid in fostering interest in surgery and closing the gender gap in our field.

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ALTHOUGH THE GAP appears to be narrowing, the physician workforce still overwhelmingly comprises males, with only about 35 per cent of the population made up by female doctors, despite the fact that 170 years have passed since the first female graduated from medical school.<sup>1, 2</sup> These proportions also vary widely by region, with more urban areas having a more evenly distributed labor force, whereas rural locations are predominantly dominated by males.

However, despite these imbalances, we also know that the population of physicians in the United States is evolving. For several recent years, there have been near equal populations of male and female medical school graduates, and interestingly, for the first time in 2017, the number of women enrolling in United States medical schools represented the majority at 50.7 per cent.<sup>3</sup> Amidst these shifting populations, however, some specialties have progressed more than others in terms of

gender equilibrium. Whereas the fields of pediatrics and obstetrics and gynecology are now represented chiefly by women, others, particularly surgical specialties, have lagged behind (Table 1).<sup>4</sup> With the face of the medical profession increasingly represented by females, it should follow, then, that the balance of the genders should be similar across all specialties. Yet, with only 19 per cent of the surgeon workforce represented by females, this is not the observed reality.

The barriers to women entering surgical fields are many and complex. When considering a career in surgery, a disproportionate number of female, compared with male, students fear gender-based discrimination in the workplace, and furthermore hold concerns of unequal career advancement opportunities based solely on gender.<sup>5, 6</sup> Such fears have unfortunately been corroborated by the literature.<sup>7-11</sup> Furthermore, concerns regarding family planning and childbearing, particularly during training, have been cited as drawbacks of surgical paths as well. Most female orthopedic surgery residents have experienced negative differential treatment from their coresidents with respect to childbearing during training, and nearly half reported this bias from their attendings.<sup>12</sup>

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TABLE 1. Association of American Medical Colleges Percentage of Women in Surgical Specialties

Surgical Specialty	Women Physicians in Residency Training	Actively Practicing Women Physicians
GS	38.3%	19.2%
Neurosurgery	17.1%	7.8%
Obstetrics/gynecology	83.1%	54.5%
Orthopedic surgery	14.8%	5%
Otolaryngology	36.3%	15.8%
Plastic surgery	36.2%	15%
Thoracic surgery	21.8%	6%
Urology	24.2%	6%
Vascular surgery	33.8%	11.3%

Amidst these discouraging sentiments, it is not surprising that young female trainees seek communities of likeminded, motivated women in the field wherein they may network and find support. However, these searches often unfortunately come up short. On evaluation of medical student perspectives, female students have cited a lack of visible female surgical attending mentors as an aspect limiting interest in the field.<sup>13</sup> Junior medical students also seek female trainee role models with whom they may more closely relate, and in surgical specialties which may lack this representation, students feel dissuaded.<sup>6</sup>

In circumstances where women are equally contributing in comparison with their male colleagues, it is not without an individual cost, as a persistent gender wage gap is the unfortunate reality in medicine and surgery. The Association of Women Surgeons (AWS) has previously released a Statement on Gender Salary Equity, which has confirmed that, even after adjusting for demographic, educational, and practice model variables, a clear wage gap exists.<sup>14, 15</sup> In a 2014 evaluation of only breast surgeons, males earned an average of nearly \$70,000 more annually than women.<sup>16</sup> Furthermore, recent investigations powered by Doximity, a social media networking and news forum specifically for physicians, have shown this aspect of gender inequality is worsening, with a widening pay gap—27.7 per cent in 2017 from 26.5 per cent the year prior. According to this report, the gender wage gap was greater than \$100,000 annually.<sup>17</sup> Such inequities are striking, given several bodies of evidence which have shown decreased 30-day and overall mortality, readmission rates, and reduction in health-care disparities among patients treated by female physicians.<sup>18–20</sup>

As a novel concept, we hypothesize that social media may well prove to be the important catalyst to accelerate the integration and success of women in medicine and surgery. This forum provides limitless power to immediately connect women across a range of specialties, stages of training, and distances. Importantly, social media additionally provides opportunities to communicate, collaborate, and mentor interested students and

trainees, particularly in medical fields such as surgery where women may not readily have access to these relationships in person within their institutions or communities. Increasingly, these connections are formed and fostered virtually.

### Social Media in Health Care

Global use of social media has grown exponentially. There are now more than 320 million active monthly Twitter users.<sup>21</sup> Originally intended as a tool for connecting with family or friends, social media has now become an integral tool for numerous professional purposes.<sup>22–24</sup>

Traditionally, surgeons have been cautioned against using social media. Concerns regarding patient privacy or inadvertent sharing of unprofessional behavior served as detractors.<sup>25</sup> However, especially in recent years, surgeons have begun integrating social media as a multifaceted professional tool, and for many, the benefits of social media have been innumerable when used in a deliberate and professional manner.<sup>26</sup> Virtual communications have allowed surgeons to advocate for their patients by provision of accurate health information or petitioning commercial or legislative agencies to lobby for patient-related benefits. This shares some similarities with public health advocacy efforts, with surgeons joining established public health movements which have turned to virtual platforms, such as tobacco cessation, the Go Red For Women campaign (@GoRedForWomen), and various cancer-screening public service announcements.

The ability to network for collegiality and support is invaluable and has proven to be a particular strength for social media and women in surgery. Relationships which have been initiated in the social media setting have fostered mentorship opportunities, and additionally have expanded professional networks for career development. Social media networking and communication is also unique and advantageous in that traditionally hierarchical relationships have dissolved and been replaced by collegial, less rigid communication, which can be quickly initiated and easily maintained.

Furthermore, individuals who are otherwise geographically or socially isolated are able to collaborate in unique ways to promote and exchange ideas. It should be noted that the authors of this article used social media–based tools to collaborate on this article.

The ability for expanded professional collaborative groups has also been valuable in the advancement of clinical care, with multiple successful examples. The Thoracic Surgery Social Media Network, the International GS Journal Club, and the Healthcare Leadership groups have regular Tweetchats, online journal clubs, or forums that gather multidisciplinary discussion from around the world on the topics of health care and academic advancement.<sup>27</sup> Similarly, a variety of social medial communities are available for patients and families. Hashtags such as #LCSM (lung cancer social media) and #BCSM (breast cancer social media) have not only allowed practitioners from multidisciplinary teams to work in cooperatively online but also have permitted patients, families, and advocates to seek information and find support. Avenues for knowledge and support outside of the clinic or hospital help to empower patients to learn more about their diseases and take ownership of their medical care.

#### **Social Media, Networking, and the Unique Mentorship Needs for Women in Surgery**

Social media serves as a valuable tool to enhance the networking and mentorship of surgeons, particularly for women in surgical specialties who may lack exposure to same-gender mentors at their own institutions. Studies investigating these issues found that despite expressing that they value the role of same-gender mentorship in their career path, women in surgical specialties were more likely than men to lack exposure to same-gender mentors at their own institution.<sup>28–30</sup> Interestingly, women in medicine and surgery tended to place more importance on mentoring with regard to career progression than their male colleagues, highlighting a significant deficiency in the community.

Although this investigation demonstrated a relative lack in local institutional mentors for women, it highlighted innovative trends in mentorship outside of local communities. In particular, social media seems to be bridging the gap. Compared with medical specialties, respondents in surgical specialties were more likely to report that social media allowed them to build a larger network of same-gender mentorship, particularly in remote locations which would otherwise not be achievable without a virtual format.<sup>28</sup>

Given the relative lack of same-gender mentorship opportunities available to women in surgery, it seems that social media is increasingly important for these

relationships.<sup>31</sup> Given that social media serves as an informal platform for communication and development of relationships built on mutual interests and motivations, the guidance that young female surgical trainees and aspiring surgeons find *via* social media is influential and paramount to gender equity in surgery.

The opportunity for expanded informal networking has additional potential benefits. Residents report that they feel an increased sense of trust among faculty when relationships are harbored in this manner, and others cite collegial relationships with colleagues as significantly associated with physician motivation and job satisfaction.<sup>32, 33</sup> These relationships have been suggested to act as a medium through which peer recognition, communication, and support can be fostered.<sup>33</sup> Thus, beyond the potential of attracting women to a surgical specialty, social media interactions may have potential of better retaining women in surgery.

#### **Important Social Media Movements for Women Surgeons**

One of the early uniting social media movements which galvanized women in surgery was #ILookLikeASurgeon, created in August of 2015. In its first two months, #ILookLikeASurgeon generated more than 128 million impressions, nearly 40,000 individual tweets, and more than 7,900 participants, although those estimates continue to grow. To date, #ILookLikeASurgeon has been used more than 200,000 times since its conception, and use holds steady with nearly 3,500 tweets and 16 million impressions in the last month alone.<sup>34</sup> This movement has expanded access and visibility to female surgeons and surgical leaders and created a community much larger than any that is available to trainees locally.

Shortly thereafter, the #NYerORCoverChallenge reinvigorated the conversation and virtual community of surgeons.<sup>35–38</sup> The April 3, 2017, cover of *The New Yorker* magazine portrayed the vision a patient would see while looking up from an operating room—four faces from the surgical team peering down. However, the cover image depicted four *female* faces, an uncommon occurrence. Dr. Susan Pitt, a surgeon at the University of Wisconsin, was inspired by the cover. She recreated it with her colleagues and posted the photo on Twitter with the hashtag, challenging others to take and share their own images.<sup>39, 40</sup> Female surgeons from all over the world responded with more than 1,000 photos from at least 53 countries on six continents, including surgeons from countries where less than 1 per cent of all surgeons are females or areas where social media has very little penetrance.<sup>40</sup> On Twitter, the #NYerORCoverChallenge had more than 150 million impressions and nearly 10,000 participants.

Outside of Twitter, the AWS has started similar movements on Instagram.<sup>41</sup> This organization routinely features women spanning all aspects of surgical training and careers through their #DayInTheLife series. For the featured day, each woman is given ownership of the AWS Instagram account to photo-document and share all aspects of her life, from personal matters—childcare, hobbies, and family life—to patient and hospital responsibilities. AWS also regularly highlights female surgical leaders in their #Female-SurgeonFeature special. With more than 15,000 followers, these efforts have brought visibility to female surgeons, which is of particular benefit to trainees and students, while also creating space for this community of women.

Taken together, these virtual efforts have provided the basis for the community of females in surgery and have helped to individually and globally advance women in academia, while simultaneously providing education and employment opportunities, mentorship, networking, and support. They have occurred in a time and space where gender equity is now no longer considered optional but, instead, is vital to the development and success of organizations and communities. Social media has given a loud and united voice to women in surgery, delivering a message that has permeated throughout the profession and into society at large, highlighting issues to us, our colleagues, and the public, through lay media. These movements helped lay the foundation for gender equity in surgery, and they continue to develop the profession as well as the careers of those therein.

### Impact

The impacts of social media abound. First and foremost is the ability to form and join a community of individuals unhindered by geography, time constraints, or hierarchies. Connections are made fluidly across time zones, leading to mentorship, support, collaboration, advice, and advocacy. This can be especially important for those who are in remote locations, within unsupportive environments, or among a group one feels they cannot relate to. It has frequently been said that one must “see it to believe it,” referring to the need to visualize someone like yourself doing a certain task or profession to be able to imagine you can follow a similar course. Social media takes this a step further, not only showing you examples, but actually enabling you to engage with leaders across a variety of disciplines. This affects surgeons in practice, as well as trainees and students, irrespective of gender, race, ethnicity, sexual orientation, or other seemingly “nontraditional” surgeon characteristics.

Social media can boost efficiency, strengthening one’s ability to stay current with the literature, perform

research, and investigate what others are doing for opportunities to collaborate. Social media has also elevated the conference experience, encouraging discussions both on and offline between those present at the conference in real life or virtually, overcoming obstacles of cost and scheduling conflicts. Engagement online ensures there will almost always be a familiar face and automatic topic of conversation at any meeting, helping break the hierarchal ice that can prevent juniors from approaching more senior surgeons.

The ability to connect with a seemingly endless sea of experts when faced with a challenging case cannot be overemphasized. No matter how senior we become, medicine remains a life-long learning profession, and moments can arise when a second (or subsequent) opinion ensures the optimal care of our patients. Although making sure to observe applicable protected patient information privacy laws, social media makes these interactions possible no matter the time of day or location of practice, with the surgical community-at-large acting as a consultant. There also exists the potential to increase exposure, and rapidly and widely disseminate information, which can have both positive and negative effects. It is an alternative method to associate with members of the surgical profession, potentially leading to job positions, research opportunities, and societal committee involvement, among others.

Social media facilitates advocacy efforts, such as challenging stereotypes as exhibited by the #NYerORCoverChallenge and #ILookLikeASurgeon, with the potential to alter a profession or policy and initiate action. Although these culture changes may already be underway, social media accelerates the transition, especially if the subject becomes “viral,” implying a rapid and widespread increase in popularity and engagement. Without seeking to replace face-to-face interactions, social media holds the promise to enhance these experiences, making anyone in the world accessible from the palm of one’s hand.

### Summary and Future

Women have made enormous strides in terms of their presence, influence, and organizational participation in the world of medicine and specifically within the surgical community. In the presence of such gains, there still remains plenty of room for improvement in terms of culture, prospects for advancement, and positions of leadership. As social media has provided a means of improved networking, greater access to same-gender mentorship, and novel approaches for promoting oneself and others, women in surgery are taking note. Enabling a culture shift, providing opportunities to redefine what a surgeon looks like, and bringing women in surgery together around the globe,

social media serves as a powerful tool for female surgeons seeking to build a brighter future for our specialty.

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