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Women in surgery: challenges and opportunities

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Abstract

Women have been involved in surgery throughout history. However, despite the fact that there are now as many female medical students compared with male students in universities, men still significantly outnumber women in a number of procedural specialties, most notably surgery. This article discusses the factors that can influence women's choice of surgical career, and the challenges and discrimination that women can face as surgeons. There is a strong argument for substantive policy change at the individual, organizational, and governmental level to reduce gendered discrimination and gendered stereotypes in surgery. We call upon all organizations involved in surgery, and particularly in the emerging field of global surgery, to actively work toward equity.

Keywords: Global Surgery, Equity, Surgery, Women

Women have been involved in surgery throughout history. The first record of a woman associated with formal surgical practice is Queen Shubad of Ur[1], who over 5000 years ago demonstrated a remarkable commitment to her patients by being buried with surgical instruments, so that she might continue surgical practice in the afterlife[2]. In the last few centuries, there are numerous reports of women dressing up as men to practise surgery, with the most famous being Dr James Barry, a 19th century trauma surgeon who concealed her sex throughout the duration of her practice and was only found to be female after her until his death in 1865[3].

However, up to the 1970s, women comprised only a small percentage of medical students, making up to 6% in the United States[1]. In the last few decades, this figure has improved significantly, with the number of US and UK female medical students now surpassing that of males[4,5]. Unfortunately, this change is yet to be reflected within the surgical specialty. While the number of women in surgery is increasing steadily, still less than one third of surgeons globally are female[5], and women interested in surgery face discrimination within medical school, in training programmes and in consultancy positions[6].

There are many factors that impact a junior doctor's choice of specialty, including an attraction to the work itself, the perceived lifestyle of doctors in that specialty, and the existence of a mentor or role model in that field[3]. Conversely, in surgery, many of these issues have been identified as pushing women away from engaging in surgical training[1]. These include a lack of female surgeon role models[1,7–9], and perceptions that the surgical lifestyle is not compatible with the disproportionate burden that women bear of care-giving responsibilities.

As of 2016, there were only 20 female Chairs of Departments of Surgery in the United States[10]. Across the United States, women accounted for 8% of Professors, 13% of Associate Professors, and 26% of Assistant Professors of Surgery. Overall, only 19.2% of American surgeons are women[4]. In the United Kingdom, statistics from the Royal College of Surgeons in 2016 show an even lower percentage of female surgeons (11.1%)[10], but there are indications that this number has since increased[5]. However, female surgical consultants in the United Kingdom are represented differently in the different surgical specialties, accounting for ~25% of pediatric surgeons but <20% in all other surgical fields[9]. Overall, this data shows a clear underrepresentation of women as surgeons, Full Professors and Chairs of Departments in both the United States and the United Kingdom[6].

Unlike men, women are also likely to be deterred by the "old boys' club" reputation of many surgical specialties and departments[4]. These perceptions may not only be coming from the women themselves, with many women discouraged by their peers, partners, and family from pursuing a career that is so commonly perceived as impossible to balance with the prospect of starting a family and having children[1]. Furthermore, surgical training programs are themselves considered to be demanding and competitive (outside of the difficulties of balancing the training with nonmedical life). For women, who may lack the professional and familial support networks of men, and who struggle with gendered perceptions of what women can and cannot do, this presents yet another barrier in pursuing a surgical career[5]. This is despite the fact that research shows that "female doctors perform equally as well as their male peers on measures of medical knowledge, communication skills, professionalism, technical skills, practiced-based learning and clinical judgment"[11].

Interestingly, in the United States, where obstetrics and gynecology (O&G) is considered a surgical subspecialty, 56% of consultant

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specialist obstetrician/gynecologists in 2016 were women[12]. These numbers are similar to those in Australia, where 45% of fully qualified O&G consultants are women, but 82% of trainees (ie, those still in training to become obstetricians/gynecologists) are women. There are many factors likely to be responsible for this difference in gender representation between O&G and the other surgical subspecialties, not least that as a specialty dedicated to women's health, O&G is commonly perceived as being less of an "old boys club" and more flexible on issues such as parental leave and part-time training for their trainees[13].

Most of the reasons described above as factors pushing women away from surgery stem from broader social perceptions about women's abilities and gendered stereotypes around what are and are not appropriate career and life choices for women to make. In particular, motherhood is seen by many as an obstacle, if not a barrier, to surgical training. Most women in surgical training are in the most intensive years of their training at the precise age where many women are considering having children (ie, 28–35). However, it is at precisely this point when the idea of taking time off to have children is considered least favorable—those who do so are seen as less committed to their training, at the risk of de-skilling, less likely to receive a good training position when they return to the workforce, and overall likely to have fewer opportunities for career development[9,14]. Furthermore, ideas about the required personality of a surgeon, and even stereotypes about the level of physical strength required to be, for example, an orthopedic surgeon, are also often cited as factors discouraging women from surgery[5,9].

Even when female doctors pursue and are accepted into surgical training, in many surgical subspecialties there are higher rates of attrition (ie, withdrawal or exclusion) from the training program for women trainees, with similar issues as those listed above—a lack of flexibility, and adequate role models—being cited as the main reasons for women to drop out of programs at this point[15]. As a result, women are subject to a hidden higher standard to enter and thrive in the surgical field[16].

This inequality is also reflected in the existing gender pay gap in surgery which, as in all other aspects of society, is significant. Studies suggest that women earn 27% less than their male counterparts, and are also less likely to be promoted[17]. Australian data shows that the gender pay gap in medical specialties is on average 33.6%, and in some surgical specialties this may be as high as 60%[18,19]. In the United States, the referral system by fellow doctors prompts surgeons to more working opportunities and success. Within this system, women are also more severely punished than men—when a patient dies in the hands of a female surgeon, referrals to them from other doctors drop around 54%, while there is only a small drop in equivalent referrals for male surgeons after a death event[16,20]. This translates as a perception of incompetence and distrust of the female surgeon's skills[20].

As a result, those that do enter the surgical field would be expected to perform at higher levels than their male counterparts due to the increased number of hurdles and seemingly hidden unequal standards. However, it was recently shown that female surgeons did, in fact, perform equally good or even slightly better on early postoperative outcomes, with reduced 30-day mortality, length of stay, complications, and readmissions as opposed to male surgeons[16,18].

Looking forward

Despite the above, numbers of women in surgery are slowly increasing around the globe. Movements such as the #ILookLikeASurgeon Twitter hashtag, "New Yorker Cover Challenge," and the Women in Surgery association in the United States have played a significant role in highlighting the need for substantive policy change to reduce gender discrimination and gender stereotypes in surgery. In this context, it is imperative that all organizations working in surgery, including in global surgery, recognize the additional difficulties that women surgeons face and work actively to guarantee equal rights to everyone. In addition to such recognition, however, professional surgical organizations need to implement clear evidence-based policies to reduce gendered discrimination and harassment in surgery and minimize harmful stereotypes about who can, and cannot, be a surgeon.

In Australia, the Royal Australian College of Surgeons has invested significant resources into investigating the issues of sexual harassment and discrimination rife within the surgical profession, after significant media attention in 2015. This began with a major inquiry into the level of sexual harassment and bullying within Australian surgery—which found that almost half of surgical trainees had experienced bullying, discrimination or sexual harassment[19]—and has resulted in a multi-year plan incorporating major policy changes including, among other things, increasing the functionality of complaints mechanisms, incorporating compulsory training for surgical trainees on discrimination, bullying, and sexual harassment and increasing teaching training for those surgeons involved in surgical education[21,22].

O&G training programs, which are similarly time intensive and procedural skills based, may provide a source of inspiration for those looking to improve surgical training pathways for women. For example, the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) has in the past decades implemented changes including: allowing up to 2 years of parental leave during training; allowing for part-time training after the first year of the program; and also counting completed training in terms of weeks rather than term rotations (meaning that if you attend 3 of your 8 wk then have to take time off, those first 3 wk will still count)[23]. Each of these policies could arguably be introduced in surgical training pathways throughout the world.

What can we do?

Removing all of the barriers to women in surgery will require fundamental and long-lasting social changes in how people perceive the role of women within society, and increased understanding of the fact that a person's career opportunities should not be limited by their gender, race, or sexual orientation.

As with all social issues, any change will need to start at an individual level, with organizations and individuals setting an example to show that gender discrimination has no place within surgery. Furthermore, there are numerous organizations already campaigning on the issue of women in medicine, and specifically women in surgery. Collaborative projects, especially around policy and advocacy, with these organizations will be key to effecting lasting change.

Where though does that leave doctors, researchers, and others interested in global surgery? Given the relative paucity of information available about women in surgery worldwide (although granted this has increased admirably over recent years) it is hardly surprising that little research is available regarding the presence and experience of women surgeons in the emerging field of global surgery. However, the same principles undoubtedly apply, and

given global surgery's relative youth as a surgical field now is the most opportune time to ensure that it is a field which combats gender disparity within its ranks at every level—individual, organizational, and governmental.

The participation of medical students is relevant in this area, as they are the future of global surgery. They can have an active role in advocating for better policies on gender discrimination to be implemented at the University level, as well as with larger professional health care institutions. In addition to the policies mentioned above, they can also support these institutions to develop explicit declarations or commitments against gender discrimination within healthcare. In this way, we can make surgery a better profession: not just for women, but for everyone seeking to provide health care in an environment free from discrimination.

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