



ASiT Medical Student Essay Prize

Addressing the recruitment shortfall in surgery - How do we inspire the next generation?



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Application rates to surgical training programmes by British medical students have significantly declined in recent years, with surveys of students noting a marked decline in interest in surgery over this time [1–4].¹ This decline has been attributed to changes in both medical school and the surgical work environment: in medical school, a shift in focus in the curricula and a change in the gender make-up of students; in the surgical work environment, an increase of surgeon-specific outcome reporting and restricted working hours [2,3,5,6]. Addressing the drivers of the decline, therefore, is necessary to ameliorate the recruitment shortfall in surgery.

Opportunities for more surgeon-led practical experience need to be further integrated into the British medical school experience. Studies assessing how to stimulate interest in surgery amongst medical students have demonstrated that practical and interactive experiences of surgery during early medical school training effectively stimulate interest in pursuing a surgical career [4,7–15]. What is key here is a positive interaction with surgical professionals: this can be teaching-based aimed at increasing clinical or career-based knowledge, take the form of interactive practical skills sessions, or via mentorship relationships between surgeons and students.

A recent study in Brazil demonstrated the beneficial impact of ‘National Trauma Leagues’ on interest in surgery [7]. These ‘Leagues’ are surgeon-led University societies tasked with increasing knowledge of trauma surgery, providing hands-on operating experience, and organising apprenticeship opportunities. The formation of surgeon-led ‘ASiT Surgery Leagues (ASL)’ at medical schools would provide students with both hands-on experience and positive interactions needed to foster interest in a surgical career.

However, these experiences do not need to be in an operating theatre to be effective. In cardiothoracic and vascular surgery,

interactive workshops involving guided dissection, surgical skills practice, and talks from surgeons, were shown to successfully increase interest in a career in surgery [4,8,10,11]. Workshops in surgical specialities organised by ASLs nationally would increase interest in surgery by addressing the declining exposure to surgery at medical schools.

Mentorship has repeatedly been shown to be a crucial factor in developing interest in surgery [16,17]. The establishment of ASLs would enable the development of a Surgeon Mentorship Database, consisting of surgeons interested in undertaking mentorship roles. This would create opportunities for networking and the formation of relationships between students and surgical role-models.

Women constitute an increasing percentage of graduating medical students, but remain substantially under-represented among applicants to surgical training, leading some authors to describe female medical students as a ‘large, and largely untapped, resource in surgery’ [3,5]. In order to attract women to surgery, studies highlight three key factors: the importance of female role-models and mentors; hands-on exposure; and a need to change the perception of gender in surgical environments [3,5,16]. Whilst the gradual increase in female surgical trainees and consultants from increased numbers of female graduates may passively increase the number of female role-models and mentors, greater active engagement is required in order to attract more female medical students to surgery.

Targeted events for female medical students are a means of providing access to and promoting female role-models and mentorship relationships, whilst also enabling necessary hands-on experience. These events could include networking sessions, lectures by female surgeons and Q&A panel sessions, in addition to providing a gendered element to the aforementioned mentorship relationships via ASLs.

The formation of ‘ASiT Women’s Surgery Leagues’ (AWSLs),

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operated in collaboration with Women in Surgery (WinS) - a national initiative established by the Royal College of Surgeons - would ensure the effective implementation of targeted events [17]. WinS organises events to support women in surgery, but these are primarily targeted at surgical trainees. The formation of AWSLs would therefore create a means of national, regular and targeted promotion of surgery amongst female medical students. Additionally, WinS operates a directory of female surgeons who are voluntarily contactable for advice; this could be leveraged as a Female Surgeon Mentorship Database, providing opportunities for long-term mentorship and access to female role-models.

The perception of gender stereotypes in surgery is a major factor responsible for the low interest in surgery amongst female medical students [3]. Studies have shown lifestyle implications alone are not sufficient to explain the lack of female interest in surgical training; rather the belief that gender plays a part in career success has a decisive impact [18–20]. For example, women have the highest levels of representation in paediatric surgery and the lowest levels of representation in orthopaedic surgery – respectively perceived as feminine, due to the focus on children, and masculine, due to the historic necessity for physical strength in the specialty [3]. Furthermore, women are more likely to apply for general surgery jobs than orthopaedics; that is to say, these differences cannot be explained by on-call duties and hours alone [21]. It is therefore important to actively challenge the stereotypes associated with surgical specialities at a national level, ensuring that application levels are not detrimentally impacted by gendered stereotypes.

AWSL and WinS sponsored mentoring will combat these stereotypes by promoting female role-models who eschew them. However, more needs to be done to change the broader perception of the role of gender both in surgery generally, and between surgical specialities. WinS recently promoted a social media campaign - “#ILookLikeASurgeon” – to combat the common stereotype of surgeons as male. Additional social media awareness campaigns and national workplace initiatives promoted by associations like ASiT and WinS are needed to challenge gender stereotyping in surgery, and thus the negative impact this has on applications.

Recruitment to surgery depends not only on increasing opportunities for exposure and mentorship, but also a positive view of lifestyle and career prospects [12–14]. The importance of these factors has led researchers to suggest that political intervention has negatively impacted recruitment of surgical trainees, most notably in high-risk specialities [2]. It is posited that the publication of surgeon-specific outcomes has been diverted from its aim of transparency, and instead produces professional conflicts of interests, in turn reducing surgical application rates [22,23]. Introduction of these policies in the UK was undertaken despite knowledge of the widespread negative impact on surgical morale and recruitment rates, following similar measures in the United States [24]. Surgeon-specific data publishing has been criticised by both staff and patient groups, creating what the Society of Cardiothoracic Surgeons describes as an atmosphere of ‘widespread discomfort’ [2,25]. No research has been conducted into assessing student attitudes toward public reporting, but attitudes within the hospital environment combined with the reported research, means that students are also likely to be sensitive to these concerns.

Recognition of the negative influence of surgeon-specific outcome publishing is needed, but abolition of a system that embodies greater transparency in healthcare is undesirable. However, transparency measures should be altered to increase the accuracy of performance assessment and reduce the negative impacts of the current system. Following the illustration of negative effects in the United States, a Hospital Star Rating System was devised [26]; a similar system could be adopted in the UK, with the reinstatement of centre-specific outcomes and other quality indicators. Surgical societies should advocate a reformation of the current system in order to combat the problematic environment it engenders and the impact this has on perceptions of

surgery by medical students [23].

Reductions in surgical trainees' operating time has contributed to the declining interest of medical students in surgery [6]. Public reporting of outcomes has disincentivised consultants to train on their operating lists, and the implementation of the European Working Time Directive has reduced trainee working hours, meaning large numbers of trainees do not receiving adequate training [27]. Survey data suggests students have noted this decreased practical exposure, with students referencing the lack of operative experience for trainees as a drawback of a surgical career [6].

Increasing trainee operating time is needed to prevent a further decline in interest in surgery. Not all consultants should be obligated to train, but those who choose to train should be better supported to provide dedicated training lists and clinics [27]. In addition, the reformation of outcome reporting would alleviate operating time constraints, fostering an environment more conducive to education. Associations like ASiT should undertake an active role in highlighting these issues to consultants, emphasising the need for more trainee operating time, whilst advocating a move to dedicated training lists and changes to public reporting.

Inspiring the next generation to increase applications to surgery requires wide-reaching systemic changes both in medical education and the surgical profession. In medical schools, there needs to be greater access to positive interactions with surgeons, providing clinical and career information, hands-on exposure and experience in surgery, as well as role-modelling and mentorship relationships. Within surgery, active measures are needed to target negative perceptions of the profession: firstly, in challenging and addressing gendered stereotyping of roles and environments; secondly, in promoting changes to the current outcome reporting system that has a short-term negative impact on training, but also longer-term impacts on the career environment. Associations such as ASiT are well-placed to establish programmes that address educational issues, whilst simultaneously advocating and promoting the need for broader changes within surgery.

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