

Attitudes, Motivators, and Barriers to a Career in Surgery: A National Study of UK Undergraduate Medical Students

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INTRODUCTION: Numerous factors influence the career choices of undergraduate medical students, although little work has focused specifically on the surgical specialties. We aimed to investigate medical students' early experiences of surgery along with the motivators and barriers to selecting a surgical career.

METHODS: All final-year medical students were invited to participate in an online survey. A range of quantitative data (expressed as a proportion of total respondents) and qualitative data (grouped and thematically analyzed) were collected to evaluate students' attitudes to careers in surgery and potential influences on these.

RESULTS: A total of 482 students from 20 medical schools throughout England and Wales completed the survey. Overall, 91% of respondents had work experience before medical school, in which the greatest satisfaction was reported in the 21% who undertook placements in surgery. In addition, 58% expressed a desire to spend time working abroad and 59% to undertake a period of research; the primary motivator for both was career/professional development. Surgery was the most popular career choice amongst respondents. The 2 most important factors in decisions pertaining to their career were reported as interest in the specialty and work-life balance. Students draw career advice from numerous sources, most commonly mentors (49%) and student surgical societies (46%). Only 1% wanted more website information, with personal contact being paramount.

DISCUSSION: It is vital for the continuing strength of the profession and the quality of surgery for the public that we continue to attract the best undergraduates into careers in surgery. Surgeons of all grades must be aware that how they

are perceived by students affects future career choices. Early experiences of surgery are fundamental in assisting medical students to make informed career choices. (J Surg 71:662-667. © 2014 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

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COMPETENCIES: Patient Care, Professionalism, Interpersonal and Communication Skills, Practice-Based Learning and Improvement

INTRODUCTION

It is well known that numerous factors may influence medical student career choices.¹ A number of early studies have been performed to examine medical students' career choices, both in the UK and overseas.^{2,3} Some have specifically attempted to focus on attitudes to careers in surgery; however, there still remains a great deal of uncertainty as to what the biggest influences are.⁴⁻⁶

Professional bodies have a responsibility to provide good quality information and careers guidance in support of both those who aspire to a career in surgery as well as those who may not have considered surgery as a possible career choice.⁷ To facilitate this, an evidence base is needed that includes medical students' early experiences of surgery and how this may affect career choices. We aimed therefore to undertake a confidential web-based survey of final-year medical students throughout England and Wales to investigate their career intentions and explore factors that may have influenced these.

METHODS

A letter of invitation was sent to the administration offices of all 26 medical schools throughout England and Wales

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detailing the rationale and content of the survey. A request to forward the link for the survey to all final-year medical students was made. Reminders were sent at 6 weekly intervals until confirmation that the survey had been distributed was received.

The survey was designed and administered by Conform IT solutions. Before dissemination, the survey was tested amongst student representatives of the college, who completed the questionnaire and provided feedback to inform the final version. All final-year medical students were eligible to complete the questionnaire, which had an estimated completion time of 10 minutes. The questionnaire remained live for a period of 3 months and collected information on students' attitudes to careers in surgery, as well as potential influences on this such as early experiences of surgery, perception of the role of surgery within the undergraduate curriculum, role models, and mentorship.

A range of both quantitative and qualitative data were generated. Quantitative responses were tabulated and expressed as a proportion of total response. Following review of the qualitative responses, common themes were identified. These responses were then independently grouped into themes by 2 observers (P.S. and J.M.) for analysis and discussion. Where there was discrepancy in allocation to themes, a consensus was reached through discussion.

RESULTS

A total of 482 students (59% female; 41% male) responded to the questionnaire. When describing their ethnicity, 65% of respondents stated to be white British, 8% Indian, and 5% Chinese. The vast majority (76%) came from socioeconomic classes I-III. As such, their family backgrounds are in either higher managerial occupations (e.g., military officers, managers, doctors, solicitors, and teachers) or intermediate occupations (e.g., clerks, secretaries, and computer operators). Overall, 14% of all respondents were graduate students.

Students from 20 of the 26 medical schools throughout England and Wales responded to the survey. There were no geographical, institutional, or other identifiable differences between those schools from which students did and did not respond. We suspect that lack of response is likely to reflect the medical school's position on circulating questionnaires from outside organizations; however, we received no direct communication to this effect. Of the responding institutions, 4 were "new" medical schools, i.e., formed since 2006, with 81 (17%) respondents from these institutions. Overall, 24% described their course as problem-based learning, 64% as lecture based, and 69% as systems based/integrated.

Before Medical School

Over a third of students (37%) have family members already in the medical profession, with over half of these

(23% of the total) being in their immediate family. In the main, these family members were either family doctors (38%) or anesthesiologists (8%).

Nearly all students (94%) had completed medically related work experience before commencing medical school. Overall, 27% had completed 1 placement, 33% completed 2, 17% completed 3, and 17% completed more than 3. Of those that did not complete any work experience, only 4% ($n = 17$) stated the reason to be an inability to access/organize a suitable placement. Moreover, 60% of students organized their work experience through a personal contact, whereas 27% approached the hospital volunteer office and 21% their school's career advisor. A total of 944 work experience placements were reported. Of these, 42% were within hospital medical specialties, 21% in surgical specialties, 21% distributed amongst the remaining hospital-based specialties, and 16% in family medicine. Satisfaction with work experience was highest in surgery, with 56% rating the placement as "exceeded expectations." A similar rating was obtained in 34% of medical placements, 33% of placements in other specialties, and 23% in family medicine.

Analysis of free-text comments centered on 3 themes: first, and the most common, the difficulties which college students are having in securing their work experience; second, the value and enjoyment of this experience seems to be high; and final, there is a good understanding of the significance placed on direct observation and understanding of the workings of the medical profession on selection for entry to medical school.

At Medical School

Overall, 23% of students stated they had chosen their specialty before entering medical school, and 80% reported a high-level confidence in this decision. A further 65% identified their specialty during medical school: 7% in year 2, 9% in year 2, 33% in year 3, 38% in year 4, and 13% in year 5.

Regarding anatomy teaching, access to the various methods was reported as follows: prosection (74%), lectures (73%), dissection (65%), plastinated models (37%), and virtual/e-learning (24%). In totality, throughout the duration of medical school, 25% of students will have spent less than 5 weeks in formal anatomy teaching. Overall, 71% of the responding students have had access to surgical skills training. This is delivered from multiple sources including the medical school curriculum (82%), student surgical societies (41%), professional bodies (4%), and private companies (2%).

Table 1 demonstrates the exposure that students report they are receiving to the various surgical specialties. As could have been predicted, exposure to general surgery and trauma and orthopedics is the highest, with pediatric surgery following closely behind. Oral and maxillofacial surgery, cardiothoracic surgery, and plastic surgery seem to be the most underrepresented in the curriculum.

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