Scientific Open Access Journals
SOAJ

Journal of Medical Education and Training

Research Article | Open Access

COVID-19 and Changing Perceptions Towards Postgraduate Surgical Training within a United Kingdom Based Hospital Trust

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Received: 05 August 2020; **Accepted:** 20 August 2020; **Published:** 24 August 2020

Abstract

Aims and background: The evolution of the current coronavirus disease-2019 (COVID-19) pandemic continues to impact global healthcare systems on an unprecedented scale. Here, we use data from a local NHS trust within the United Kingdom (UK) to examine the perception of medical students and foundation doctors towards postgraduate surgical training.

Design: This cross-sectional study was carried out via a survey disseminated within the East Sussex Healthcare NHS trust, King's College Hospital, and King's College London Medical School. The survey was active for 14 days (from 15th March 2020 to 28th March 2020), comprising a total of 40 foundation doctors and 10 medical students.

Results: A total of 50 responses were received across five hospitals and their associated medical school. A decrease of 10% and 25% was observed in interest to pursue surgery in medical students and foundation doctors, respectively, following the outbreak of COVID-19. Over 40% of foundation doctors holding postgraduate surgical training offers were not accepting them, and of those, over 40% would not consider reapplying to surgery. There was a drop in interest across a select set of specialities, and this was more obvious where aerosol-generating-procedures was a common occurrence.

Conclusion: These results highlight the need for a more efficient and effective response to address the immediate situation, as well as a robust contingency plan to avert the repercussions the surgical field could face.

Keywords: COVID-19; Pandemic; Reallocation; United Kingdom; Surgical education

Introduction

In the United Kingdom (UK), newly graduating doctors must spend two years in a foundation programme, during which they rotate between a total of six specialties with a mix of surgical and medical themes. These two years, are for many, the deciding years as to which specialty they may choose to embark on. Many start preparing their portfolios, seeking to gain extra experience in fields they find interesting, particularly surgical training posts which start with a two year rotational "core surgical training" programme, comprising specialties related to the main specialty being pursued.

The COVID-19 pandemic continues to be an unprecedented global crisis, with detrimental long-term repercussions. Little remains unchanged in the world of medicine, and surgical training is of no exception. Significant changes have occurred, from cancellation of services to reduction of clinics. These drastic changes have enabled surgical trainees and foundation doctors (many of whom, will have been undertaking surgical rotations) to be redeployed to support their colleagues tackle the evolving clinical burden of the pandemic [1,2].

This altered clinical landscape, does however, pose a major barrier to surgical education and training. For newly qualified doctors and trainees, the shift towards managing medical cases has limited the opportunity for development of the fundamental skills and techniques required to manage surgical patients. For medical students nearing the end of their degrees, withdrawal from clinical placements (in addition to the sparse surgical content of the curriculum) has impeded their education and learning. For both groups, these circumstances will undoubtedly have a negative impact on their motivation and interest to pursue surgery [3].

Whilst many papers have explored these themes, few have attempted to illustrate the trends by using data. Our objectives here were to quantify data collected from a local NHS trust, as an example of the pattern that may be observed more broadly across the country, as well as discussing the points arising from these findings to gain a better understanding of perceptions towards postgraduate surgical training in light of the pandemic.

Material and Methods

An electronic survey was designed and disseminated to three National Health Service (NHS) hospital sites within the south of England hosting foundation training doctors and medical students from schools affiliated with the trust. The data used in this study came from only those participants that completed the survey and consented to their information being used for the purposes of this study. In terms of inclusion criteria, only medical students or foundation doctors were included because they were the relevant target population for this topic. The respondents represented the dependent variables, while the survey questions were the independent variables.

The survey was designed and analysed in a brainstorming session with a group of foundation doctors and medical students, who became the test group for the piloting of the survey (Appendix 1). The survey was disseminated via email and also shared within already established social media groups within these trusts. The survey was open to responses for a total of 14 days starting mid-March 2020. In total 50 individuals responded to our survey, comprising 40 foundation doctors and 10 medical students. The data collected by this survey sampling technique was incorporated into Microsoft Office Excel spreadsheet, where it was edited, processed and converted to graphical data.

Results

A total of 40 foundation doctors and 10 medical students responded to the survey. They were asked whether they were interested in pursuing surgery prior to the COVID-19 outbreak, and whether they are currently interested. The response to this is summarised in Figure 1, showing that for both groups, there was a decrease in interest. A larger drop was observed for the foundation doctors as compared to the medical students. For both groups, however, the majority were still interested in pursuing surgery.

Foundation doctors were asked whether they had received offers to a surgical training programme - and for the 26 that had, whether they would be accepting this offer (Figure 2). Just over a half of those said that they would be accepting their offer, but a large number would

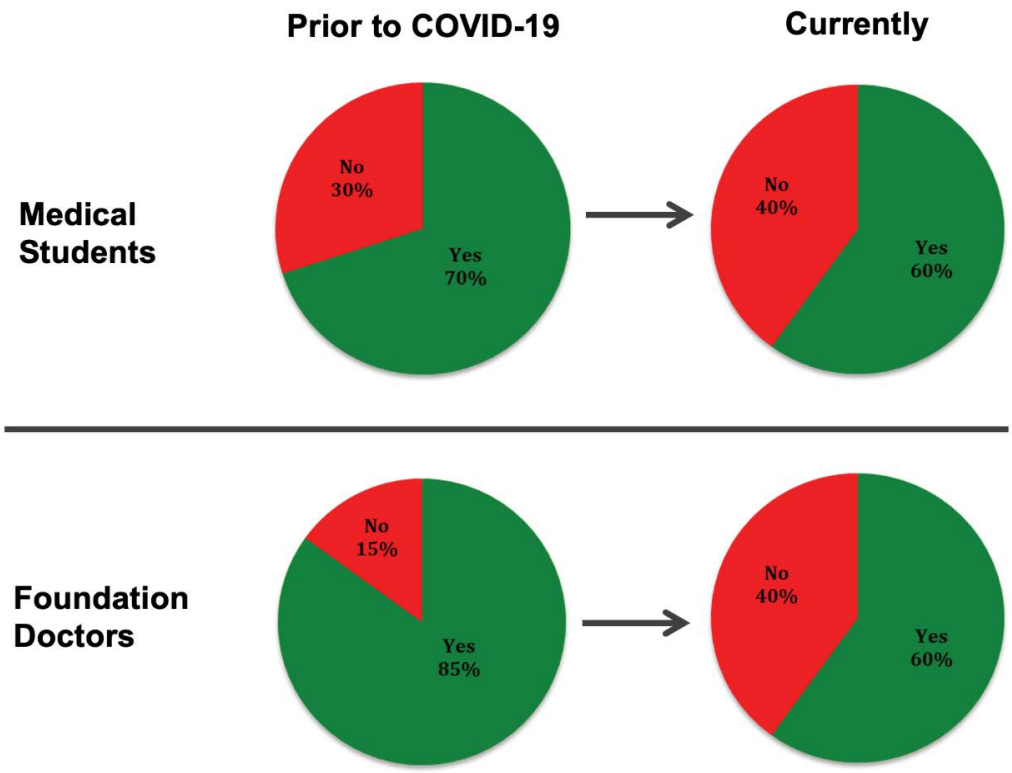

Figure 1: Proportion of medical students and foundation doctors interested in pursuing surgery; currently and prior to the COVID-19 outbreak.

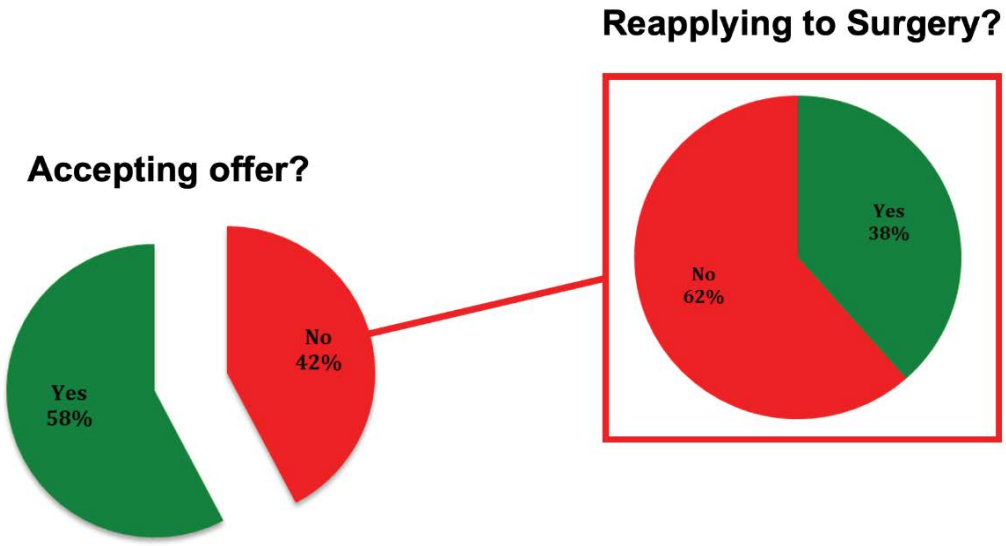

Figure 2: Proportion of foundation doctors that have accepted an offer to undertake surgical training; and of those that declined (red square), the proportion that will consider reapplying to surgery.

be turning theirs down. Of those that would be declining offers, the majority would not consider reapplying to surgery at all.

The foundation doctors that were interested in surgery were asked whether they had any preference of surgical specialty, and to express whether this had changed following the pandemic. A total of 34 had a preference prior to COVID-19, but only 24 still had an interest in a specific surgical specialty. The 10 individuals that did not express a current choice, were of those that were no longer interested in pursuing surgery at present.

Discussion

Our results provide only a snapshot of perceptions about surgery amongst medical students and foundation doctors, but the effects of the pandemic have been almost universal, so it would not be far-fetched to suggest that the same patterns may well be observed more widely across the country.

The declining interest in surgery (Figure 1) and low uptake of training programme offers (Figure 2) is certainly not surprising. In fact, these trends have been shown previously by studies that demonstrate a rise in specialty vacancies, as well as showing how a lack of adequate surgical experience could negatively impact career choices [4,5]. The COVID-19 pandemic may worryingly deteriorate these trends for both medical students and foundation doctors.

The shift in preference of surgical specialty (Figure 3) could also be a consequence of the current climate, where aerosol generating procedure (AGP) specialties may be more affected [6]. The limitations

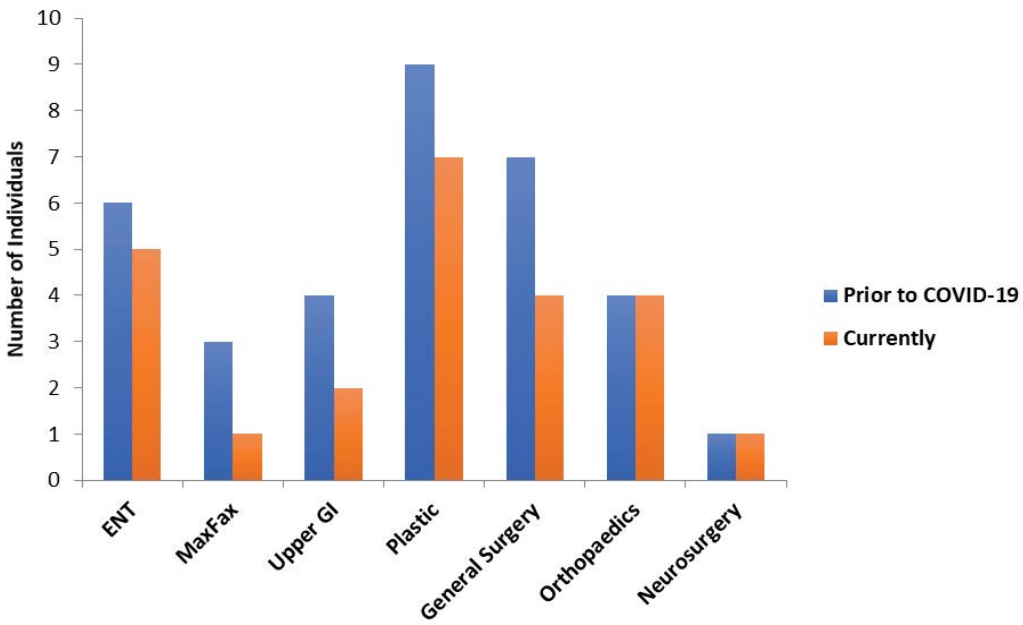

Figure 3: Number of foundation doctors that expressed choice of surgical specialty training before and after the COVID-19 pandemic.

placed on rotating into surgical specialties and redeployments, has already deprived prospective surgical trainees from experiencing a variety of specialties. This, together with the reduced inclination to enter specialties where AGPs are a common occurrence, will further reduce future trainee pools for those specialties.

It is important to acknowledge that surgical education was already faced with many challenges prior to the pandemic. Adapting to innovation and technology, accommodating progressive changes in practice and guidance, and responding to external demands for patient safety and accountability, are just some examples. COVID-19 has only escalated these problems, and the generic reaction to altering training will no longer be effective or sufficient.

Further study is needed to determine whether changes in perception displayed in our results translate to real world changes in the number of core surgical training posts accepted, or whether following the return of foundation doctors and medical students to their clinical rotations, this will have been a temporary fluctuation. There have been previous studies showing significant change in career choices of final year medical students following disruptive events elsewhere in the world; such as natural disasters in the USA [7] or the SARS outbreak in 2002-2004 and its effects on medical education in east Asia [8]. A longitudinal study could shed more light on the long-term effects of this pandemic, as well as providing in-depth detail about demographics, variables and compounding factors (all of which, were beyond the scope of this paper).

Moreover, the postponement of educational conferences and workshops due to public health concerns and to aid availability of the trainee workforce has led to further compromise in training and skill acquisition amongst trainees. Although such measures are necessary to minimise risk of transmission, alternative avenues of delivery of such educational needs must be addressed in light of the recurrent waves of infection in this pandemic. Redeployment of foundation doctors in surgical training posts and other trainees into frontline sectors such as accidents and emergency and acute medical units will not only impact the number of trainees but also the training quality as more emphasis will be placed on service provision rather than educational needs of the individual.

The royal college of surgeons has published guidelines on protecting the surgical workforce and fulfilling alternate surgical and non-surgical roles [9]. However, little has been done in the way of attracting/keeping prospective surgical trainees' interests during their foundation training. Understandably, priority remains with current trainees and service provision, however different modes of engagement with this pool of prospective surgeons needs to be explored in terms of long-term delivery of courses and conferences that the society previously held for this target population.

An important consideration for the present as well as the future, is simultaneously maintaining the integrity of surgical training and establishing a sustainable workforce. This balancing act will require fine-tuning; something that could benefit from shared experiences with other trusts, to find the optimal operational capacity. Organising the workflow in this manner, provides the flexibility and time needed to adapt education and training milestones, and this in turn will aid reduction of the disruptive effects experienced. Furthermore, provisions need to be devised to mitigate any further interruptions in teaching and learning, be it COVID-19 or any other unforeseen circumstances. A shift towards wider incorporation of e-learning (webinars, e-conferences, and virtual patients) content and computer-based surgical simulation software programmes, represents a crucial substitute system that needs to be implemented.

Ultimately, a coordinated effort on a national level with input from experts across all deaneries and training programmes could facilitate the implementation of such a model within the curriculum.

In this study we faced a number of limitations, foremost being the small sample size and the regionality of the study, which affects the transferability of the findings and generalisation across the whole population. This also posed a barrier to carrying out comprehensive statistical analysis. In addition, responder bias needs to be considered within the sample that completed the survey, as well as participant access which was influenced by the platforms used to disseminate the survey. The factors underlying this include but are not limited to personal views on the pandemic, individual's pattern of behaviour pertaining to use of social media and personal experiences.

Conclusion

Our results suggest a shift towards uncertainty in choosing surgical specialties within the medical school and foundation programme training timeframes. This could negatively impact the number of future applicants and hence the future pool of surgical trainees available. Preventing this potential deficiency in trainee workforce

requires foundation and medical schools to make appropriate provisions and changes to the training pathways. Not only must there be a plan in place to make up for lost training opportunities but also a contingency plan to be established for the mitigation of future unforeseen circumstances.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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Appendix 1: The online survey.

1. Are you currently a medical student or a foundation doctor?
Medical Student
Foundation Doctor
2. Were you interested in pursuing surgery prior to the COVID-19 Pandemic?
Yes
No
3. Are you currently interested in pursuing surgery?
Yes
No
4. Did you have a preference of a surgical specialty prior to the COVID-19 pandemic?
Please list
5. What is your current, if any, preference of surgical specialty?
Please list.
6. Have you received an offer for a surgical training programme? (Foundation doctors)
Yes
No
7. If yes, will you be accepting your offer of surgical training post?
Yes
No
8. If no, will you be reapplying for surgical training?
Yes
No
9. Do you consent for your responses to be used for research purposes?
Yes
No