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Medical student engagement with surgery and research during the COVID-19 pandemic: Supporting the future workforce for post-pandemic surgical recovery

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Medical students have lost invaluable exposure to surgery and research during the COVID-19 pandemic, with the majority of placements being cancelled or converted online [1]. As such, they have been denied opportunities and mentorship which have historically influenced a surgical and/or clinical-academic career [2,3].

The resulting impact on career decision-making remains to be determined. In response to these concerns, the Student Audit and Research in Surgery (STARSurG) Collaborative partnered with the Association of Surgeons in Training (ASiT) and Surgical Research Society (SRS) to deliver virtual regional events in the UK and Ireland. These sought to promote engagement with surgery and academia, and local networking among those with shared interests. Attendees completed post-event feedback regarding their experience of engagement with surgery and research during the pandemic, and the impact on career intentions. 5-point Likert scales established degrees of respondent agreement with statements (1 [strong disagreement] to 5 [strong agreement]). Data were summarised using mean and standard deviation (SD) and differences between groups were compared using parametric tests.

Of an estimated 850 attendees across 31 regional events in the UK and Ireland between January and May 2021, 393 medical students returned post-event feedback. There was agreement that the COVID-19 pandemic had made engagement with surgery (mean: 3.95, SD: 1.01) and research more challenging (mean: 3.79, SD: 1.03). This was consistent when comparing earlier stage students to later stage students (penultimate and final years) for both surgery (3.92 vs 4.01, mean difference = -0.09 (95% CI: -0.30 to 0.12), $p = 0.408$) and research (3.80

vs 3.78, mean difference = 0.01 (95% CI: -0.21 to 0.24), $p = 0.911$).

Most respondents had either decided on a surgical career (47.6%, $n = 187$) or were considering one (40.4%, $n = 148$). Relatively few had decided on non-surgical careers (12.7%, $n = 50$). Overall, respondents reported a significant increase in knowledge and intention to pursue a surgical and/or academic career following attendance (Fig. 1). Notably, those undecided on a surgical career or not previously considering a surgical career reported a significantly larger increase in knowledge and intention to consider a surgical career than those who had already decided. This was not observed between these groups when considering academic careers.

COVID-19 has drastically shifted the nature of medical students' exposure to surgery and academia globally. These data stress the value of educational opportunities and initiatives to combat the lack of surgical and research experience caused by the pandemic. Medical students are actively seeking opportunities for engagement, and we have demonstrated that virtual regionally-specific academic surgery evenings can be effective in addressing their unmet needs. This was most effective for promoting surgical careers for those medical students who have not yet decided on this path.

Although placements may have resumed, these remain limited and students risk being overlooked as surgeons face increased service demands as focus shifts to post-pandemic recovery. Continuation of accessible events (e.g. ASiT/SRS "Preparing for a Career in Academic Surgery"), and novel online resources (e.g. INCEPT [c]lINicalAcademia Elearning PlaTform [4]) are likely to become increasingly important avenues for aspiring surgeons to engage with surgical academia.

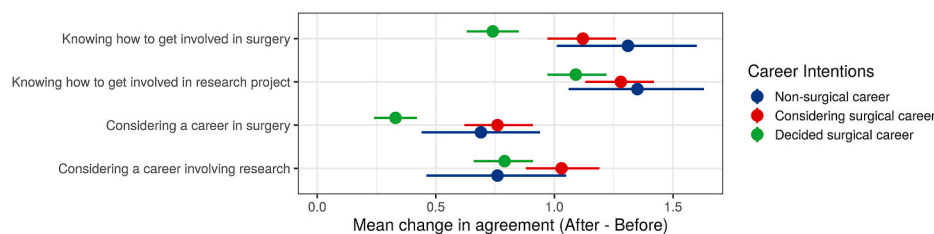


Fig. 1. Mean change in agreement with knowledge and intention to pursue surgical and/or academic careers.

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Overall, at a time when surgery and academia are already grappling with how to improve inclusivity and representation [5], further lack of exposure due to COVID-19 risks the loss of aspiring academic surgeons and exacerbation of existing inequities. Concrete efforts at grassroot and national levels are required to ensure we continue to encourage a representative and research-active surgical workforce for the future.

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Ethical approval

The data presented is based on post-event feedback collected as part of evaluation of the academic surgery evening events. No ethical approval is required.

Author contributions

KAM and RAK conceived the study. SQS, SB, and KAM analysed the data. All members of the writing group shared responsibility for event organisation and deliverer, and contributed to the writing process.

Regional organisers delivered events at their respective universities, and collected post-event feedback.

Guarantor

Kenneth McLean.

Data statement

Respondents were assured raw data would remain confidential and would not be shared. Code generated and used are available from the corresponding author on reasonable request.

Provenance and peer review

Not commissioned, internally peer-reviewed.

Declaration of competing interest

None.

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³ Surgical Research Society (SRS).