Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

In Reply to the Letter to the Editor Regarding "Early Effects of COVID-19 Pandemic on Neurosurgical Training in the United States: A Case Volume Analysis of Eight Programs"

I would like to thank Goyal et al. for their interest in our study[1] concerning the early effects of COVID-19 pandemic on neurosurgical training in the United States. The study included a retrospective review of the monthly operative case volumes of 8 US neurosurgery residency programs for 2019 and January–April 2020. It also included a survey to assess the effects of the COVID-19 pandemic on education, research, and clinical aspects of residents' training. A lead resident from each participating program was selected to answer the survey questions.

In their letter, the authors compared the results of their survey of neurosurgery residents in India regarding the effects of the COVID-19 pandemic with ours.[2]

The authors reported that approximately 50% of the surveyed residents were deployed to perform COVID-19-related activities, which was different from our findings in which none of the residents in the participating program were deployed to provide medical care for COVID-19 patients.[1] The difference could be due to selection bias, as the pandemic impacted different regions of the world and the United States with different severity.[3] Also, the social distancing protocols that were implemented in the United States, which slowed the spread of the infection, could have contributed to the difference.[4]

Additionally, Goyal et al. reported that 75% of the their survey respondents observed a decline in research activities, whereas 87.5% of our survey respondents noticed an increase in the time available for research, and 62.5% observed an increase in academic productivity, represented by an increase in the number of written and or published abstracts and manuscripts.[1] In the United States, there are several types of research databases (institutional, public health, insurance carriers, etc.) that are available, with substantial amount of data.[5] Various research projects can be conducted using these databases without the need for interacting with patients. Similarly, research projects such as retrospective chart reviews and metanalyses can be conducted without the need for physician-patient interaction.

Goyal et al.[2] reported that 88.13% of their survey respondents indicated that the pandemic will have a negative impact on their operative and clinical skills,[2] whereas in our study, only 37.5% of the respondents had a similar response.[1] Some of the surveyed programs in our study have a high surgical case volume, which was evident in the pre-COVID-19 case numbers.[1] Also, the neurosurgery training in the United States has a predefined length of 84 months, which is longer than the neurosurgical training in India.[6] Moreover, the nonurgent elective surgical procedures cancellation and postponement policies affected March and April 2020, and were followed by a gradual roll back of the restrictions that started in May 2020. Collectively, these factors, in addition to the small sample size in our study, could explain the difference in the response between the 2 surveys.

In our study, the respondents indicated that surgical simulation or cadaveric dissections were not used to account for the decline in the surgical case volume. This can be attributed to the social distancing protocols that made cadaveric dissection laboratories unavailable to trainees due to risk for COVID-19 transmission. Also, the majority of employees were required to work from home unless they were essential for patient care.[7] Concerning the surgical simulation, the availability, and practicality of such technology is less than ideal for real-life translation.[8]

The ongoing COVID-19 pandemic is dynamic in nature and has affected all facets of health care. Therefore it is necessary to continue to assess the impact of the pandemic on education and prepare strategies to mitigate any negative effects on residents' training.

Zaid Aljuboori

Department of Neurosurgery, University of Louisville, Louisville, Kentucky, USA
To whom correspondence should be addressed: Zaid Aljuboori, M.D.
[E-mail: zaid.aljuboori@yahoo.com]

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