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Letter to the Editor Regarding "Impact of COVID-19 on Neurosurgical Training in Southeast Asia"



We read with great interest the article by Wittayanakorn et al.¹ They conducted an online survey among neurosurgery residents from Indonesia, Malaysia, Philippines, Singapore, and Thailand between 22 and 31 May 2020 and have described the ongoing challenges faced by neurosurgery residents in their training due to the COVID-19 pandemic. Out of 298 respondents in the survey, the majority (160) were from Indonesia. Most of their respondents (87%) worked in a hybrid hospital, treating both COVID-19 and non-COVID-19 patients. Thirty-six percent of their respondents had been deployed to COVID-19 duties in their hospitals.

Though the pandemic adversely affected neurosurgery training in the entire area, certain key differences were noted between residents from these countries, depending upon their existing health care systems, impact of COVID-19 in the country, national strategies to control COVID-19, and the stage of pandemic in the country at the time of survey. Whereas all Singaporean trainees were provided with adequate and appropriate personal protective equipment (PPE) in the workplace, 43% respondents from Indonesia and 41% from Philippines felt that PPE in their hospital was either inappropriate or inadequate in supply. The majority of the residents reported a major decline in neurosurgical operations (both elective and emergency) performed by them during the pandemic. This was more pronounced for Indonesia (90% decline in elective and 71% decline in emergency cases), Philippines, and Malaysia compared with Singapore (52% decline in elective and 30% decline in emergency cases) and Thailand. One-third of the respondents indicated that their outpatient clinics had closed and many neurosurgical centers in Southeast Asia had switched to telemedicine clinics. In the current situation, 71% of the respondents missed out at least 1 opportunity for international education and training. Most of the trainees (74%) believed that the COVID-19 crisis will have a negative impact on their overall neurosurgical training and were most concerned about the decrease in their hands-on surgical experience, uncertainty in their career advancement, and occupational safety in their workplace.

Across the world, the COVID-19 pandemic has wreaked havoc in all spheres of life, most notably among health care workers. Residents form the backbone of the workforce in the hospital. From patient care to paperwork, bedside clinics to seminar presentations, and from surgeries to late-night studying, resident doctors do it all. Their hectic and often unpredictable schedule makes residents all the more susceptible to communicable diseases, particularly those working in emergency situations. Thus, with reduction in patient interaction, surgeries performed (especially non-emergent), reduced time spent in the department, and, added to it all, the high risk of contracting COVID-19, neurosurgery residents have been affected adversely.

India is a lower middle income country, per World Bank categorization.² As of 1 October, 2020, with 6,310,267 confirmed COVID-19 patients, India is the second most affected country after the United States.³ We conducted a nationwide survey of neurosurgical residents in India, from 7 to 16 May 2020, with 118 respondents from various phases of training, spanning the length and breadth

of the country.⁴ We found results very similar to those of Wittayanakorn et al., though a few key differences are apparent. Most respondents (88.1%) in our study worked in institutions that dealt with both COVID-19 and non-COVID-19 patients. Almost half had been involved in the management of COVID-19 patients and 83.9% of these reported being provided with adequate PPE, although 51.3% were unsatisfied with the quality of PPE as they felt it hampered their surgical performance. The number of surgeries performed/assisted by residents in our study declined from an average of 39.9 to 12.3 per month ($P = 0.000$), a decrease of 67.5%. Regarding outpatient services, 16.1% had completely stopped outpatient departments (OPDs), while 42.37% had switched over to telemedicine exclusively and 11.0% were doing both physical OPDs and telemedicine. We have observed reduction in OPD attendance, inpatient volumes, and surgeries performed at our center,⁵⁻¹¹ and also all over the country¹² during the ongoing pandemic. This concern has been voiced by neurosurgeons around the world.¹³⁻³¹ Reduction in the operative volumes has reduced surgical experience for residents.^{1,4,32-34} Rationing of resources such as PPE has left residents either unscrubbed or debarred from the operation theater.

Academic activities, too, have taken a hit, with almost three-fourths of our respondents reporting hampering of their research/thesis,⁴ compared with one-third as reported by Wittayanakorn et al.¹ The number of academic sessions conducted by neurosurgery departments in India have decreased by 32.60%, from a median of 5 per week to 2 per week ($P = 0.000$). More than 60% of our respondents reported that their departments in India have transitioned from physical classroom teaching to video conferencing platforms to conduct academic sessions, as in Southeast Asia.¹ Eighty-six of our respondents (72.88%) replied that a conference that they had planned to attend had been cancelled due to the current situation. Because of the decreased time spent in clinical and surgical activities, almost 90% of residents were worried about the pandemic impacting their operative and clinical skills adversely. Rescheduling of exams were also of concern, mainly among those closer to the time scheduled for exams ($P = 0.002$). More than half of our respondents were apprehensive about adverse effects on future job prospects and fellowship opportunities.

Neurosurgical residents have been deployed to aid in fields such as critical care and COVID-19 patient management, as shown by our experience and that of Wittayanakorn et al.^{1,4,35} Being a doctor surely mandates residents to rise to the occasion and contribute in every way possible. Nevertheless, the loss in neurosurgical training must not be overlooked in the slightest. Training is a time for neurosurgery residents to learn as much as they can from their patients, colleagues, attending consultants, and staff in terms of clinical and operative skills as well as focus on research and academics. These years of intensive training are the "make or break" time in the life of every neurosurgeon. Every effort must be made to ensure that the neurosurgeons of the future are confident and competent. It is heartening that various neurosurgery bodies have adapted rapidly to this change by frequently conducting online educational programs to ensure that residents do not lag behind academically.³⁶⁻³⁸ The more widespread use of video conferencing and online resources has great potential for neurosurgical education and collaborative research nationally and globally for scientific exchange and knowledge.

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