

A Letter to Editor: How Does Covid-19 Change Neurological Surgery Residency Training in Shahid Beheshti Medical University Hospitals?

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During this period since last year Covid-19 has made too many changes in our lives. Medical students and especially surgical residents are not exceptions. The pandemic affected neurosurgery training curriculum in many aspects such as clinical education, surgical and hands-on experiences which is the most important item in surgical training, research activities and clinical trials, volunteer works to improve CVs. It caused the suspension of clinical rotations and even elimination of away rotations. Pandemic also altered the medical accreditation process, grading system, and licensing exams. It had impacts on residents' work hours and bring about Covid-19 medical care, i.e. ER triage and ICU shifts... Attending physicians in teaching hospitals must prioritize resident education and patient care. In this regard, elective surgeries are almost canceled or postponed and surgeries are limited mostly to trauma cases and end-stage tumors which jeopardize patients' life.

Crisis management

It also is an opportunity to experience multidisciplinary crisis management and improve neurosurgery residents' leadership and decision-making skills and learn how to manage a team when countering a large-scale emergency. ¹ In this era, neurosurgery residents work in other wards and services additionally, to control the high load of covid-19 patients.

E-learning

The pandemic also changed teaching methods and moved the attending to use more of e-teaching methods and e-conferences. The use of simulation-based training increased in our hospitals. Mobile devices, augmented reality and virtual platforms opened their places in education. The advantages of webinars and video conferences are that participants can record it and re-watch it at any time and learn at their own pace.² There is one point to indicate, that as we are a developing country, attending most of the scientific conferences is banned for us, but in the pandemic, we could attend webinars and virtual gatherings, and annual meetings easier.

Free online courses increased during the pandemic and this matter solved the location and distance problems, also the financial problems, as residents have low incomes, now they can afford attending the online classes.

Simulation-based training

Simulation-based training helped neurosurgery residents to exercise on a wide spectrum of clinical surgeries without any risks. As the pressure on surgical fields' residents is high to perform high-quality care, this is an important issue. Also, considering the time limitation of neurosurgery residents to experience different surgeries, simulation-based surgery training helped them to experience more. The pandemic highlighted the benefits of this method.

Mobile devices

Mobile apps recently proved to have a role in residents training ⁴ as they provide cheaper access to educational materials, guidelines, e-books, journals, surgical videos, and online conferences. ² There are mobile apps that provide a virtual platform in which surgeons can consult regardless of distances and locations. They can hold virtual daily rounds and participate in decision-making for various patients and help trainees solve difficult surgical and clinical cases considering patients' privacy and ethical issues in different hospitals in different countries.

Telemedicine

This mean has been reported in different literature and reported to be a cost-benefit method especially in rural communities whose access to neurosurgical resources is limited.^{1, 5-7} some units with restricted resources and access to trauma network and neurosurgical sites suggested consultations via telephone or videoconference.¹ This method actually needs a certain degree of imagination and creativity. In this method examining the patient takes place using household items and with the patients' permission, it can be recorded and be used to discuss with a senior colleague.¹

In surgical fields, the most effective way to learn is hands-on techniques without them trainees will not have the required skills to operate.

Decreased load of elective surgeries is an issue that may have long-term effects on future neurosurgeons skills. In this regard, surgical dummies still have their place in skill labs.

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