

## Ongoing COVID-19 pandemic and medical education: Pros and cons

The COVID-19 infection has emerged as one of the most devastating pandemics in the history of mankind. Almost the entire world has been affected by this pandemic one way or another. Health Care Providers (HCP) are working tirelessly to prevent, protect, care, treat, and rehabilitate countless patients each day across the globe. On the other hand, the health care workers (HCWs) also suffered from various other problems including acquiring the infection, increased mental stress, burnout, fatigue, and psychological issues.<sup>[1]</sup> In this context, the effects of the COVID-19 pandemic on trainees' education (medical students and residents) are not widely assessed and reported. Without a doubt, the effects of the pandemic have had both negative and positive impacts on medical education.<sup>[1,2]</sup> Therefore, this article will highlight various challenges as well as a few distinct advantages for medical trainees during the COVID-19 pandemic.

On the positive side, this catastrophic pandemic provided several unique learning opportunities for the trainees. First, the pandemic has enabled students to learn *enhanced adaptability and flexibility* through the rapid change in learning behavior and pattern as a result of the changing resources and needs.<sup>[1]</sup> This is an important domain of learning and imparts training for multiple practical and theoretical modules including doffing and donning, hand washing methods, social distancing, various surgical/anesthetic/hospital-specific protocols, testing protocols, and communication skills.<sup>[3]</sup> Second, trainees had the *great (even lifetime) opportunity* to learn about the COVID-19 disease and related consequences. Third, they also learned to imbibe *new communication tools* including Zoom, Microsoft Teams, and others.<sup>[4]</sup> These methods assist in the day-to-day teachings, rounds, and patient assessments. In a survey-based study from South Korea, a majority of medical students were satisfied by online teaching modules, and even more than 80% of the students expressed interest to continue with online learning after the end of the COVID-19 pandemic.<sup>[5]</sup> In addition, in response to the stressors posed by the pandemic, a greater emphasis on mental health awareness and interventions has been placed by faculties. Some of these interventions include stress management sessions for students, tailored learning plans to assist with achieving educational checkpoints, and personal portfolio programs to promote personal goal setting.<sup>[1,3]</sup> Finally, *managing a public health crisis* at all levels is the greatest learning and education experience for the trainees.

On the other hand, the negative consequences of this pandemic outweigh the positive aspects and include adverse physical, social, emotional, and psychological impacts on trainees. Medical students, for example, were faced with reduced exposure to clinical settings and faculties had to balance between the students' safety while ensuring that adequate hospital clinical exposure was obtained.<sup>[4]</sup> Nevertheless, trainees experienced significant interruptions and modulations in classic classroom teachings, bedside teachings, electives, call scheduling, in-person group learning, as well as in many supplementary campus resources.<sup>[6]</sup> In addition, faculties had to aid students to navigate through the uncertainty and stress around examinations and credit evaluations as well as the potential impact of the closure on future residency or job applications.<sup>[1]</sup> Furthermore, a great deal of stress resulted from residency changes such as restricting the number of applications allowed per applicant, delaying residency programs' access to applicant profiles, and replacing visiting internships with virtual sessions.<sup>[1,7]</sup>

Due to a lack of research resources and recruitment issues amid the COVID-19 pandemic, various research projects (BSc med, resident projects, fellows projects, etc.) were affected and delayed.<sup>[5-7]</sup> Undoubtedly, the learning experience of trainees involving research methodology, patient interactions, and follow-ups were partly or completely affected. In the recent survey (conducted in India with a response rate of 46.6%) to assess the impact of the COVID-19 pandemic on post-graduate medical teaching, research, and mental stress, a few important concerns were highlighted.<sup>[8]</sup> These include experiencing substantial mental stress due to the inability to complete the thesis (research project) on time as well as the probable extension of the residency period, risks of contracting infection, sleep disturbances, and uncertainty related to future jobs. Interestingly, this survey also explored the possible ways to manage research project submissions as part of residency requirements and suggested to incorporate a few changes: extending the submission date, reduction in the number of study participants, and change in the research topic. It is important to acknowledge that the magnitude of the current problem being faced by trainees requires extensive feedback from all levels of teaching hospitals including students, teachers, administrators, and other health care providers. In addition, the economical aspects of trainees' education in different parts of the world also require active support from the political and the local administrations.

In conclusion, various aspects of trainees' education are being affected during this pandemic; however, there is an urgent need to incorporate various strategies into teaching hospitals so

that the overall competency, skills, and knowledge of trainees would not be compromised.

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## References

1. Sahu P. Closure of universities due to coronavirus disease 2019 (COVID-19): Impact on education and mental health of students and academic staff. *Cureus* 2020;12:e7541.
2. Marshall AL, Wolanskyj-Spinner A. COVID-19: Challenges and opportunities for educators and generation Z learners. *Mayo Clin Proc* 2020;95:1135-7.
3. O'byrne L, Gavin B, McNicholas F. Medical students and COVID-19: The need for pandemic preparedness. *J Med Ethics* 2020;46:623-6.
4. Roskvist R, Eggleton K, Goodyear-Smith F. Provision of e-learning programmes to replace undergraduate medical students' clinical general practice attachments during COVID-19 stand-down. *Educ Prim Care* 2020;31:247-54.
5. Kim JW, Myung SJ, Yoon HB, Moon SH, Ryu H, Yim J-J. How medical education survives and evolves during COVID-19: Our experience and future direction. *PLoS One* 2020;15:e0243958.
6. Gabrielson AT, Kohn JR, Sparks HT, Clifton MM, Kohn TP. Proposed changes to the 2021 residency application process in the wake of COVID-19. *Acad Med* 2020;95:1346-9.
7. Farlow JL, Marchiano EJ, Fischer IP, Moyer JS, Thorne MC, Bohm LA. Addressing the impact of COVID-19 on the residency application process through a virtual subinternship. *Otolaryngol Head Neck Surg* 2020;163:926-8.
8. Gupta A, Haritha D, Ramachandran R, Subramaniam R, Sai GM, Chikoti G, *et al.* Nationwide impact of COVID-19 pandemic on postgraduate medical teaching, research, and mental stress. *J Anaesthesiol Clin Pharmacol* 2022;38:S32-45. doi: 10.4103/joacp.JOACP\_673\_20.

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