

The Impact of Coronavirus Disease-19 on Teaching Learning in Undergraduate Medical Education, What Can Be Done?

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ABSTRACT

The novel coronavirus disease (COVID-19) outbreak is unprecedented humanitarian crisis in recent times more so for developing countries like India. The pandemic has affected all areas; medical education is one of them. Paradoxically health care workers are needed more now than before but hundreds of medical colleges providing training for upcoming workforce had to be closed temporarily in the wake of infection spread. Hence, medical education institutions in India, like other countries, are now ensuring online education and limited off line education in the campus. It is in these times there is a need to reflect on what can be done for continuity of medical education effectively in the middle of numerous uncertainties. The medical teachers have immense responsibility in sustaining the standard of medical education and continuity of teaching along with other duties related to COVID-19 care. For enthusiastic teachers, teaching is a joy irrespective of many hurdles including learning new methods of online teaching and for responsible students, there is real need to learn. This article focuses on ways and means of continuing medical education.

KEY WORDS: COVID-19, Medical Education, Undergraduate medical training, MBBS

The novel coronavirus (coronavirus disease [COVID]-19) outbreak is unprecedented humanitarian crisis in recent times more so for developing countries like India.^[1] The pandemic has affected all areas; medical education is one of them. Paradoxically health care workers are needed more now than before but the campus of hundreds of medical colleges providing the workforce had to be closed temporarily in the wake of infection spread. Hence, medical education institutions in India, like other countries, are now ensuring online education and limited off line education in the campus. It is in these times there is a need to reflect on what can be done for continuity

of medical education effectively in the middle of numerous uncertainties.

The medical teachers have immense responsibility in sustaining the standard of medical education and continuity of teaching along with other duties related to COVID-19 care. For enthusiastic teachers, teaching is a joy irrespective of many hurdles in learning new methods of online teaching and for responsible students, there is real need to learn. There have been media reports about students who have committed suicide because of unaffordability to access digital teaching-learning programs.^[2]

There is a need for a teaching learning process to make up for the lost time and also because of an unpredictable time frame that could be available in near future as COVID-19 peak is expected to be in later part of 2020 in India. Teaching-learning is a time-dependent process of listening, assimilation, practice, and application of knowledge from medical

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education provided. Even the assessment of students is a time-dependent process. There is a need to reflect on how each phase of medical education can be completed during the COVID-19 pandemic.

Information communication technology is booming during the COVID-19. It has heralded a new era of teaching learning; it can now be carried out from anywhere and at any time. For students, this can be the truly called “Selfie” time, an age for self-learning. With some concern related to the technology issues such as network problems and the addiction to screen time, the young generation of India who are tech savvy, the online learning is expected to be positive development. The medical teachers may have to learn adapting to technology enabled online teaching methods. Teachers may have concerns about individual student’s involvement in online platforms. However, progress in technology including machine learning and artificial intelligence may solve the issues over a period of time. The progress of technology in medical education has to be seen as positive considering the issues related to the pandemic, wherein medical students may have safety issues of being infected in relation to their physical presence in the campus or in the hospitals for learning from the patients. There is indeed a long journey to travel for people across the globe to feel safe in times of pandemic. It is in these uncertain times there is need to look for, on what can be done.

The teaching in medical schools was formal, with actual classes in the physical presence of students. They were structured and rolled out in the phased manner with periodic evaluation. The informal pattern of online class that is streamlined live and or stored in the web portal or mobile application is considered dynamic where students in self-learning mode can decide when to learn and what to learn. It is important to consider how medical education can continue using the best of formal and informal modes of teaching. The pandemic is a time where the entire curriculum of each phase of MBBS or each section of subject can be effectively carried out by dividing it into those components that are predominantly in knowledge or cognitive domain and those in predominantly skill or psychomotor domain. Medical teachers and students can together decide which aspect of the topic falls into which section. That will ease in designing the working plan in the available time frame. For example; if the topic is pneumonia, the knowledge or cognitive domain will include prevalence, etiology, clinical criteria

for diagnosis, etc. The skill or psychomotor domain shall involve steps in examination of the patient (for example, with pneumonia) such as observation, palpation, percussion, and auscultation.

The knowledge or cognitive domain learning is easy for students, as they can learn by themselves. Information is available from recommended medical textbooks or online sources. The teacher has a minimal role that can be reserved for providing guidance and clarity when students need it and to highlight the key aspects or relevant additions. Medical students shall have a major role in the cognitive component; to read, comprehend, and recall the information, thus demonstrate the expected mastery over the learning. Students can use peer interaction to learn in a better manner and self-evaluate in peer-to-peer mock examination. Hence, contact classes can be avoided, limited online theory classes can become interactive and time can be conserved for those areas that need more attention. There can be exclusive dashboards in online platforms for each batch of students to virtually discuss topics, raise questions, analyze answers, and develop peer-to-peer learning under limited supervision of a medical teacher. Goal-oriented discussion and those students who are actively involved and assist in peer-to-peer learning can be rewarded by various methods. Predetermined methods of rewards can be incorporated in the scoring during assessment.

To carry forward teaching-learning of skill or psychomotor domain, the teacher role shall involve demonstration first and followed by supervision of the right approach or method used by the students. This aspect of learning carried out routinely in bedside clinic is challenging in times of pandemic and innovations are needed. For example; in examination of lungs, the teacher demonstrates the skill with the patient (under a safe environment) or using a mannequin. Role play with normal people can also be incorporated. The process can be streamlined live or recorded video clips can be made available. The students have an important role in repeatedly doing it to master the skill. They can learn the method with help of family members or friends (with their consent). Once the students are able to appreciate the normal, in any skill domain as per the protocol, the other steps in learning are much easier. With least exposure to infection, modified bedside clinical sessions can be carried out in small groups. The teacher or peer evaluation of skill acquisition can be monitored online. With

enhanced audio-visual technology, even skills such as auscultation or percussion can be amplified many times for clarity in learning. Use of animated videos or three-dimensional augmented reality can also be valuable. Wherever or whenever patients are available for examination (Example patient with pneumonia), teachers can use “Fish Bowl” teaching methodology. The basic idea is that the teacher conducts a coaching session with an individual participant and other participants observe and learn vicariously.

With the progress of above methods, assessment of students through periodic internal examination and/or final examination can also be carried out in online mode with proper planning and mock examinations on proposed new methods. Breaking the old rules and discovering newer ways may be needed during pandemic. Theory examination can be with open books for students and questions with case scenarios that are predominantly designed to evaluate application of knowledge are used in assessment. Wherever required, the examination can be video monitored remotely. Answer scripts can be scanned and evaluated online. Students can be educated about harms of malpractices and encouraged to reflect deeply may avoid such adventures.

Practical examination especially objectively structured clinical examination (OSCE) can be carried through audiovisual aids (Tele-OSCE) by

making virtual stations and online evaluations can be done. Innovative ideas can be incorporated.

In the time of a pandemic such as the ongoing COVID-19 crisis, there is an urgent need for continuity of teaching learning in medical institutions so that upcoming doctors are competent and ready to serve the society with required knowledge and skills.

As long as the student and teacher are enthusiastic, learning should never stop, however, methodology can change.

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