



Editorial

Revisiting the teaching-learning methodology of anatomical sciences in the COVID-19 pandemic era

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1. Introduction

The outbreak of coronavirus has been announced as a Public Health Emergency of International Concern and has overwhelmed more than 213 territories and countries that started in China on 17th November 2019 in the Hubei Province.¹ Much about the cause of the spread of COVID-19 is still anonymous, what has come forth is that it is transmitted via direct contact with respiratory droplets of an infected person who initiated by sneezing and coughing.¹ A person may get infected by touching the contaminated surface later touching the face or rubbing eyes with the same infected or contaminated hands. Communities must take action to counter its further transmission by maintaining social distance, which can reduce the impacts of the outbreak.¹

Formerly COVID-19 was mentioned as 2019 novel coronavirus or 2019-nCoV. It's caused by a new and different strain of coronavirus. "CO" stands for Corona "VI" for virus and "D" for the disease. Symptoms caused by coronavirus are similar to Severe Acute Respiratory Syndrome (SARS) and other types of a common cold like the Middle East Respiratory Syndrome (MERS).¹

Originated in China's mainland in December 2019. The first case was reported in Hubei Province which went unrecognised.² The infectious disease is caused by novel

severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus.² This outbreak of novel coronavirus is known as now severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It has resulted globally, as of 6th May 2021, there have been 154,815,600 confirmed cases of COVID-19, including 3,236,104 deaths reported to World Health Organisation. The second wave of COVID-9 in India is much more disruptive and lethal than the first leading to 234,071 deaths by 7th May 2021. The significant increase in the number of deaths is prophesied as the number of infected cases are increasing day by day.³ The large pandemic outbreak was witnessed in crew and passengers of Diamond Princess Cruise ship, where at a time more than 700 were affected.⁴ Now the coronavirus has outspread across many territories and countries affecting severely over 213 countries.

Due to the lethal outbreak of COVID-19, the fortification of students and strengthening educational facilities is predominantly important. Precautions are of utmost prominence to prevent the potential spread of COVID-19 in hospital premises and medical institutions. It is important to remember that COVID-19 does not differentiate between gender, borders, ethnicities, disability status, age, or religion. Education settings should continue to be welcoming, respectful, inclusive, and supportive environments to every individual irrespective of caste, gender, ethnicity or religion.

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In the present condition of Covid-19, when the whole country is locked down to maintain social distancing; the Ministry of Health and Family Welfare, Government of India and Board of Governors of Medical Council of India have issued directives to all the medical institutions to suspend classes for courses such as M.B.B.S., B.Sc. Nursing and other paramedical and allied health sciences maintain social distancing.⁵ As a result, most of the medical institutions of India have started online classes for undergraduate courses. To the extent, all the conferences, Continued Medical Education etc are being conducted virtually and or as a webinar.

For anatomy students, COVID-19 is bestowing unique challenges in imparting knowledge, skills and ensuing educational policies. We highlight specific obstacles faced by students of human anatomy throughout the COVID-19 pandemic. Additionally, we highlight ways in which students are being proactive during the toughest time of this era.⁶

2. Impact on Anatomical Sciences Education

For anatomy-bound medical students, COVID-19 policies have restricted opportunities to interact in the department to seek out potential mentors and to explore anatomical interests in the dissection laboratories (lab), skill lab, Microanatomy lab, research lab and the E-museum etc. However, anatomy learning modules, which traditionally have been offered virtually at our institution, remain relatively less affected for postgraduate students but undergraduate students missed the learning human anatomy and developing the skills in the various labs specifically cadaveric dissection etc.

This prevents the gathering of students in classrooms, learning studios, Lecture Theatres, Labs, Dissection labs, and small-group teachings in the demonstration rooms.

Over the past few years, the flipping of classrooms was introduced by many faculties to provide individualized instruction for asynchronous learning "anytime/anywhere." However, the students were still convened for laboratory attending sessions, small group teaching sessions, cadaveric dissection, and simulations.

In an ideal state, students are part of a team as a trainee or learner who in all cases needs supervision. So to define a student's professional identity depends on role modelling, mentorship and teaching-learning process in these settings as they master to prioritize patients and aspire to altruism.⁶

The question arises, during pandemic till what level of student interaction best represents this layout? In the rest of the ailing times, like blackouts, fires, natural disasters, and floods the on-going of students to colleges and departments were not affected and students continued their education throughout. However, during the outbreak of a contagious pandemic COVID-19, the students could unknowingly carry the virus and transmit it to others. The other key factor that

restricted the student's role in clinical is lack of COVID-19 testing, restriction of daily OPD's and surgical procedures, lack of awareness and education, resuming telehealth, and lack of proper personal protective equipment PPEs.⁶

What we can do to enhance online learning?

Anatomical Organizations and Medical Institutions should implement virtual platforms to render educational and mentorship opportunities for medical students. It would enhance the learning and ensure the accessibility of the department to students.⁷

The online teaching plan is advantageous due to its global accessibility, which will ensure all the students regardless of their place and location to access online teaching and webinars. Webinars comprise case studies, clinical conditions, and online exams involving the regular number of student's attendees getting engaged in these tasks throughout the unprecedented times.⁸

3. Effective Approach

Training and learning productivity is usually determined by time, money, and the utmost resources to get the desired results. But learning could get better and be further improved if fewer expenses with the involvement of less time are introduced. The idea here is to design and prepare a better methodology and successful approach whereby both efficiency and productivity can be escalated. To leave a positive impression the methods of online learning and teaching should be executed to every facet of online education i.e. theory, curriculum, teaching, practice, technology, administration, and institutional culture.

4. Courses Empowered with Videos

The digital videos are witnessing gigantic popularity, so to incorporate those into e-Learning processes would bring a resourceful and appropriate blaze to online education. So videos should be part of online education as digital videos witness enormous popularity, incorporating them into the eLearning process would bring a versatile and convenient flare to education. Videos are an asset for educational institute, students and teachers and should never be left unnoticed. So incorporating videos would leave to achieve the current success of online learning and open book examination (OBE) will add positive impacts over new and ingenious methods of teaching.⁸

5. Embrace the Power of Communication

Communication has bought a dramatic change in e-Learning and with time has gone through considerable improvement. The communication has evolved through e-mails, social media channels, teacher-student chat groups, and online interactive sessions, providing students with a platform to interconnect with teachers and co-learners. This will end up in the improvement of student engagement, as they discuss

over relevant topics of a taught course, help in raising their doubts, and make a competitive atmosphere where they could compare their marks they have got from assessments, something that would assist in creating a competitive spirit and would help them in performing better.

6. Implement Virtual Reality (VR)

The introduction of Virtual Reality (VR) has taken online/e-Learning to the next level of excellence. The fundamental reason behind its eminence in education relies on the functioning of the human brain. The average remembrance capacity of students what they read is 10%, increasingly 20% of what they hear, and about 90% of what is being done or stimulated.⁹ The use of virtual dissection can enhance the learning standards even in such pandemic if it is introduced to all medical institutions considering its efficiency.

7. Flexible Lesson Plans

Students have the convenience of reading and studying at their speed when learning online; there are chances whereby lesson plans may remain conventional. So instead of adhering to the old-school directives, courses need to explore flexible lesson plans curated according to the specific needs of the student. With the help of this, they won't be struggling on a particular topic for hours, instead of breaking things through with attentive study time on tough concepts.

8. A-Team of Competent and Skilled Teachers

E-learning should always be backed by a team of proficient and skilled mentors who could frame the schedule for students as per the requirement and demand of students. Such course fundamentally comprises of ordered curriculum, well-thought schedule, and other associated requirements that can make the learning process as coherent as it can be. Even though when fetching to online education, the presence of a skilled and qualified teacher turns out to be essential.

Integration of Technology in learning and teaching is a developing concept in contemporary medical education like the rest of the study apostle in India. Our domain of medical education is presently running a deficit of technology-based practices. In the majority of colleges and medical schools, the traditional use of wet laboratory dissection is followed over virtual dissections those being followed and used in institutions like All India Institute of Medical Sciences (AIIMS) Rishikesh and other govt. and private colleges like AIIMS Jodhpur, Government Medical College Vimsar, GSL Medical College Rajahmundry, Yennapoya University Mangalore and Apollo Medical College Chittoor, etc. As current propel for the blending of technology increases, a vast number of Academic Indian scholars are seeing virtual dissections beneficial over wet laboratory dissections for

their classroom.

It's very tough to reach any concurrence and verdict to say as of now whether or not this new emerging wave of remodelling could replace the classical and traditional methods of learning and dissection in Anatomy departments.¹⁰

9. Psychological Intervention

Psychological intervention for COVID-19 must be potent and flexible enough to alter rapidly to different phases of the COVID-19 pandemic.

Possible remedial targets include

Training, instructive and psychological support to those health professionals who are at high risk of exposure so that they come to know and manage the emotional disturbance which could hinder their work. Anxiety management, Contagion fear, and acute stress incidents comprise the major psychological disturbances.

The main objective of this perspective is to increase psychological resilience in those professionals who are at frontline duties during the COVID-19 pandemic.² People who have been going through psychopathology, for them it's important to engage their selves in emotionally vulnerable groups. The core motive here is to supervise and manage those who are undergoing COVID-19 treatment or those who have been put under preventive quarantine.

Digital care should be used to carry out outpatient psychological interventions. In a vast variety of mental disorders, the internet and phone-based psychological interventions have been proved effective clinically. Concerning this, tailoring of standard mental health delivery is important for those individuals who have pre-existing psychiatric disorders to concede the effects of social isolation and to distance oneself on mental health as a share of adaptation to quarantine and "life in lockdown".

Technology-enabled modes should be adapted and continued by those who are having existing mental health troubles to pursue psychological interventions. This includes consultations on the telephone, or with the use of digital platforms such as Zoom, Google meet, Team, Cisco, Skype, or other means provided by health development platforms.

Common factors become more important than that of usual. Particularly sharing, vindication, support and self-disclosure become of maximal and utmost importance. This validation follows as "that adjustment to the 'new normal' is normal."¹¹

10. Conclusions

While amid the pandemic (COVID-19) catastrophe, it is pivotal and crucial that academic educational societies and communities learn from the incidents and happenings to prioritize a progressive thinking and a professional approach

as hands-on solutions are instrumented. For anatomy based courses and the use of virtual dissection should be implemented overall medical schools. The use of Virtual Reality must be emphasized and introduced throughout so that no student should be affected due to pandemic as Anatomy being fundamental and core subject. For ensuring the future, the National Health Service personals are qualified, carrying on with education is important and this could be reached by medical schools and staffs. Thus continuing to engage with students via online learning and teaching platforms. Students overall are expected to having stress due to pandemic, medical students in particular. Research is showing high grades of psychological stress during any outbreak of a pandemic. And it was noted that younger students are experiencing more anxiety than senior ones, despite having less direct dealing with patients. When estimated, the overall stress level was less in medical students than that of non-health academic students. Meanwhile, during the COVID-19 pandemic crisis, it is of utmost importance that authorities and educational communities dealing with education should prioritize a positive and forward-thinking to sustain education under any circumstances.

11. Conflict of Interest

All authors of this study declare hereby that they have not received any support from any external organization for the submitted work. No contractual agreement for receiving financial support has been concluded with any organization that might have an interest in the submitted work.

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