



## A study on the feasibility of online classes for medical education

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**Abstract: Rationale:** Emergence of COVID-19 pandemic has affected all aspects of human life including medical education. All teaching institutes, including medical colleges have been shut down to follow Government issued directives like stay at home and social distancing. In that case, online medical education is the only solution to cope up with the curriculum. A study on medical students' response regarding online classes during this challenging period of COVID 19 pandemic was done. This study was undertaken to find out student's perspective of advantages and disadvantages of online classes and how to make improvement for the benefit of learners. Total 87 medical students of second professional course were participated. A set of questions were asked online and their answers were noted. Student's response was analysed. Majority of them admit that in this situation, online teaching is the only option but on the other hand, it cannot be a substitute of campus classes. According to medical students e-learning cannot replace traditional faculty led training, but as a complement to it.

**Keywords:** Medical education, COVID-19 pandemic, online classes.

## INTRODUCTION

Continuation of medical education during a pandemic is very challenging. Most of the faculty as well as students facing this type of emergency first time in life. The emergence of Covid 19 pandemic has changed the pattern of medical education worldwide. To cope the situation and to prevent the spread of the highly contagious infection, adoption of online/distant learning are being in use. The sudden change from on campus teaching – learning method to exclusively online learning is challenging and difficult for both students and teachers. This is because of non - existence of any clear guidelines on this matter. The inevitable change in medical education during this trying period needs a

lot of preparations, such as; formation of a working team, evaluation of needs of the student's, delivery of curriculum contents, assessing the students' performances and managing student's stress, (Mohammad HR *et al.*, 2020).

Medical student's responses to this sudden lockdown for Covid 19 pandemic are not clearly documented till date. This study aims to find out their response regarding changes of medical teaching – learning process from classroom to online distal learning. It also aims to document student's perspective of advantages and disadvantages regarding online teaching.

## METHODS

A survey on second year students was done on feasibility of online classes for medical students. A questionnaire form was sent online to all second-year students and instructions were given to fill the form and to submit online. All responses were anonymous. The response scale was as follows:

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

### Following questions were asked:

1. Online classes are an innovative method of teaching  
Strongly agree 1 2 3 4 5 Strongly disagree  
0 0 0 0 0
2. During the pandemic, online teaching has helped you in understanding and keeping up with your course work regardless of your location.

- Strongly agree 1 2 3 4 5 Strongly disagree  
0 0 0 0 0
3. Online teaching has helped in reducing exam related stress among students.  
Strongly agree 1 2 3 4 5 Strongly disagree  
0 0 0 0 0
4. Limitations in interactions between students and teachers has had a negative effect in understanding topics in the curriculum.  
Strongly agree 1 2 3 4 5 Strongly disagree  
0 0 0 0 0
5. Lack of hands on training has been a major disadvantage of online teaching.  
Strongly agree 1 2 3 4 5 Strongly disagree  
0 0 0 0 0
6. With online teaching, students have got an indirect training in practicing telemedicine, which can prove helpful in future.  
Strongly agree 1 2 3 4 5 Strongly disagree  
0 0 0 0 0
7. It has been beneficial to students to have access to lecture presentations.  
Strongly agree 1 2 3 4 5 Strongly disagree  
0 0 0 0 0
8. The quality of internet connection (speed, band width etc.) has been a major factor in determining the effectiveness of online classes.  
Strongly agree 1 2 3 4 5 Strongly disagree  
0 0 0 0 0

**Long answer text (optional):**

- According to you, what have been the main advantage of online classes in medical education?
- According to you, what have been the main disadvantage of online classes in medical education?

Please include any suggestion that would improve the effectiveness of online medical education.

## RESULTS

Total 87 medical students participated in this study and we got different types of responses from them. They are denoted by following graphs:

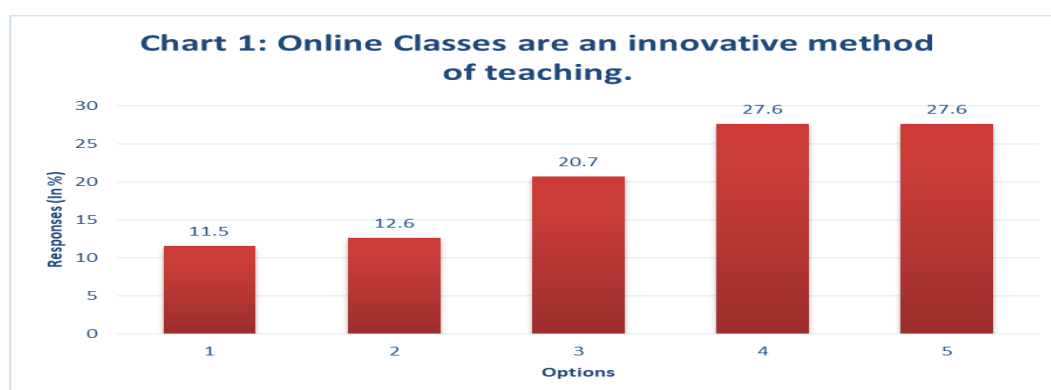


Chart 1: only 11.5% students thought that online classes are innovative (11.5% strongly agree & 12.6 % agree). Most of them either disagree (27.6%) with the idea or strongly disagree (27.6%). 20.7% students were neutral.

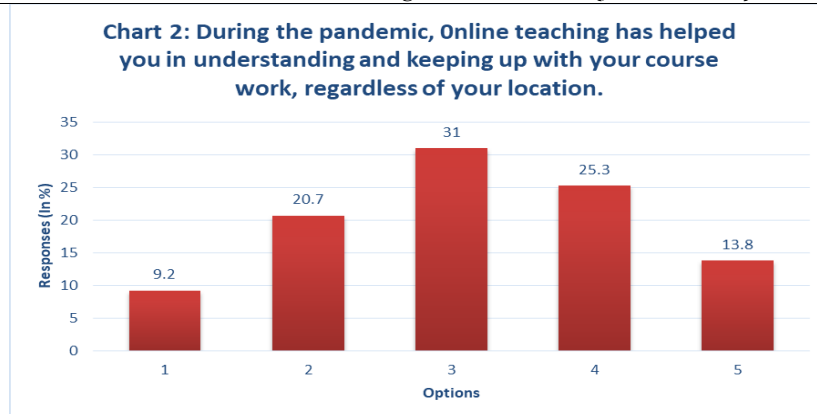


Chart 2: 31% students were neutral towards the second question, i.e.; advantage of understanding of course in online teaching during this pandemic from distant location. 25.3% students disagree and only 9.2% welcomed this method.

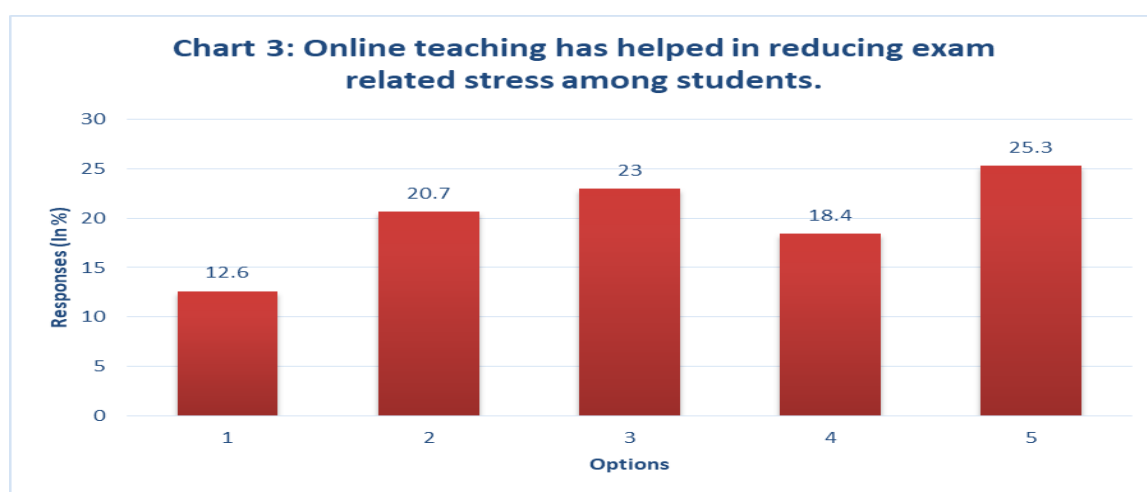


Chart 3: 25.3% students strongly disagreed and 18.4% disagreed to the idea of reduction of exam related stress in online classes. Only 12.6% strongly agreed with it.

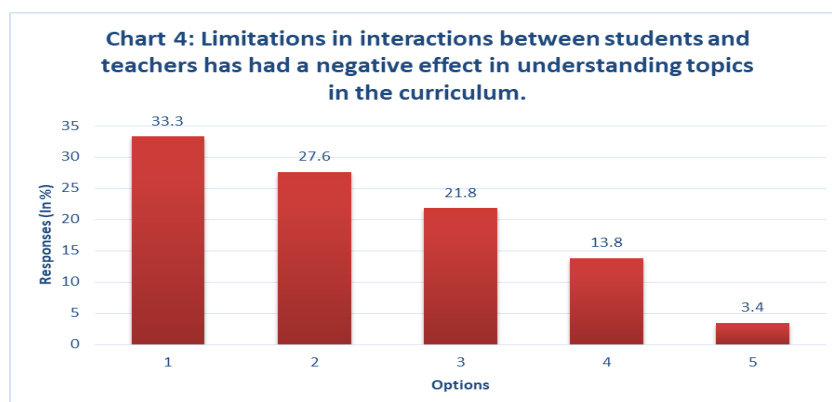


Chart 4: 33.3% students strongly agreed that limitation in interaction was causing negative effect in learning of the topic, whereas, only 3.4% strongly disagreed

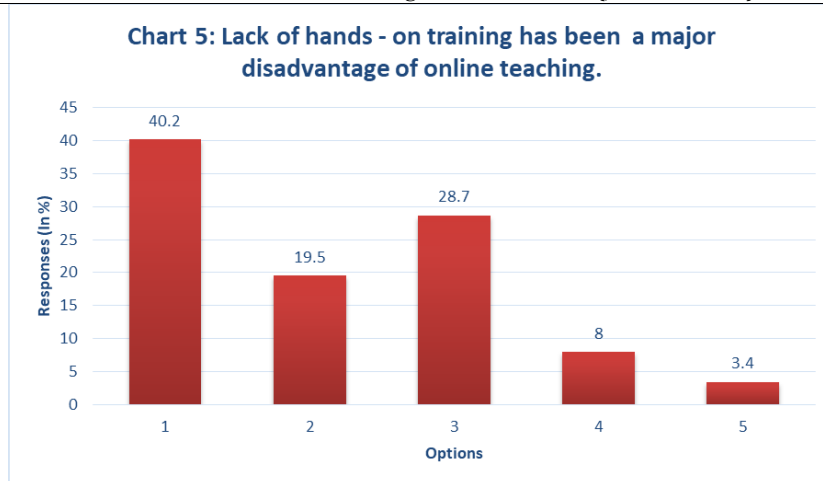


Chart 5: 40.2% strongly believed that hands on training is essential part of medical curriculum & 3.4% disagreed.

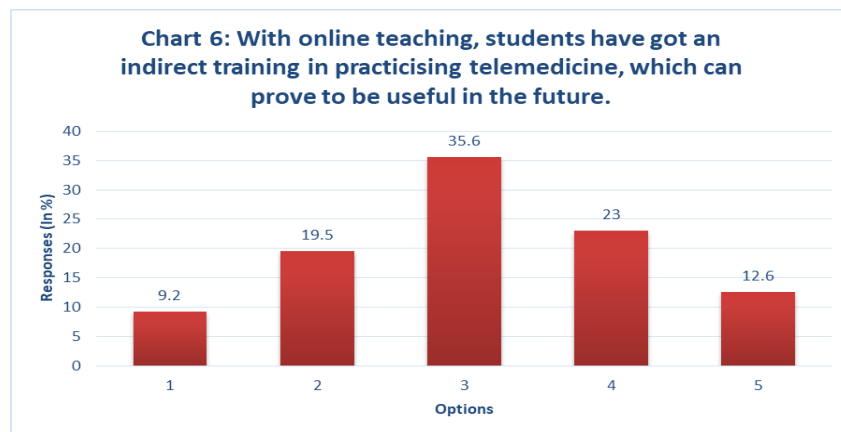


Chart 6: Training in telemedicine practice was not very appealing to the students. 35.6% of them were neutral and 9.2% strongly agreed.

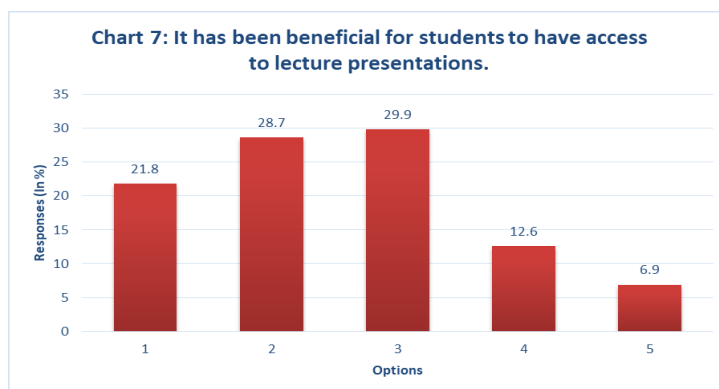


Chart 7: 29.9% of students were neutral to the idea of beneficial role of online teaching, because of access to lecture presentations. 21.8% strongly agreed and 6.9% strongly disagreed.

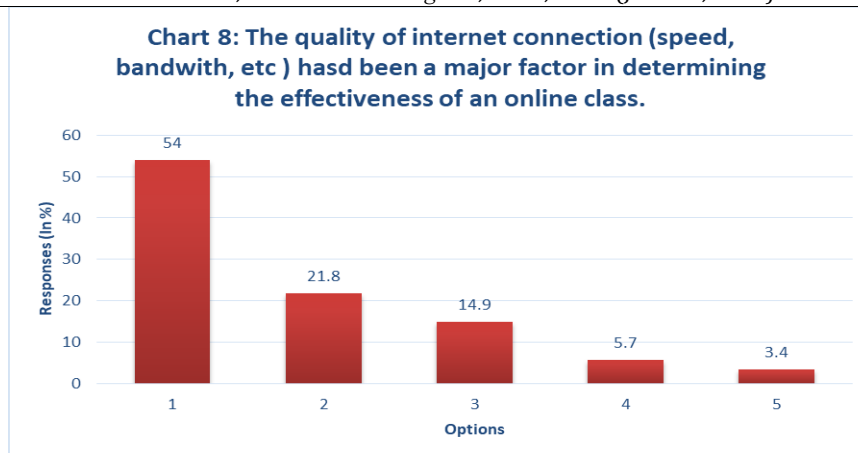


Chart 8: 54% students strongly believed that there should be good quality of internet connection for online teaching, whereas; only 3.4% strongly disagreed.

There were two optional questions asked to students regarding their viewpoints about advantages and disadvantages of online classes and how to improve them. We got total 64 responses. On advantage side, comments were following:

More time for self-study, completion of course in time, development of sense of self-study, only possible way of teaching in pandemic, stress reduction, easily accessible study material and gaining knowledge anywhere anytime.

On disadvantage side we got following responses:

Ineffective in poor internet connection, absence of physical student teacher interaction, lack of attention and absence of hands on training.

## DISCUSSION

The e- learning in medical education includes development of digital library, provision of easy access of e-learning materials, consensus of technical standardization, method for peer review of all available e-learning resources and opportunities for research for faculties and students (Ruiz JG *et al.*, 2006).

E-learning can be adaptive (individually learning) or collaborative (interactions with others). In e- learning teacher will no longer be only distributor of knowledge but also plays a role as facilitator as well as accessors of learners (Prakash J, 2006). So modern education is more of competency-based education (Hombae ES *et al.*, 2010, Leung WC, 2002). Cost- effectiveness is another advantage of e-learning (Bartley SJ *et al.*, 2004). On the other hand, many feel that, inadequate clinical preparedness due to virtual work is a less effective substitute for in person learning (Esami M, 2010, Temple University, Philadelphia, CNN interview, 2020, Rajab MH *et al.*, 2020). Presently simulation based medical education, mainly

combination of simulation and real working environment are widely in use (Abdulmohsen *et al.*, 2010). Multimedia elements; such as; graphics, video clip, animation etc. are learning assets (Ruiz JG, 2006).

Online courses are convenient, flexible and can be taken anytime – anywhere. On the other hand, online courses require good time management skills, no instruction to supervise, require more time than on campus classes and create a sense of isolation (Shaista S *et al.*, 2020, Izet ME *et al.*, 2008, Taha M *et al.*, 2020).

## CONCLUSION:

Online teaching cannot be substitute for physical classroom teaching but complementary to each other. We also believe with our students that not only virtual training but practical hands on training regarding patient care is essential for medical education.

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