

## COVID-19 IMPACT ON MEDICAL EDUCATION OF II YEAR MBBS STUDENTS IN A TEACHING INSTITUTE – A PROSPECTIVE OBSERVATIONAL STUDY

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### ABSTRACT

**Objective:** The coronavirus disease 2019 (COVID-19) has caused unprecedented disruption to the medical education process and to health-care systems worldwide. In India, almost medical schools have been suspended during the pandemic, and many students were staying at home to abide by social distancing guidelines. This has disrupted the medical education process and has increased the need to find alternatives.

**Methods:** This was an observational, cross-sectional questionnaire-based online study by the Faculty of Pharmacology for Phase II Medical students of SKNMC and GH, Pune.

**Results:** Eighty-three students responded to the online questionnaire. About 31.3% students were comfortable while using computers, mobiles, and tablets. Compare to conventional teaching method overall experience regarding the online teaching was average of 62.7%, while it was excellent for 19.3% of students and poor for 13.3%. COVID-19 also had impact on the examination of medical students (74.7%). Furthermore, students were not able to learn practical skill online (77.1%). Many students believed that this COVID-19 affected their future interest career plan while few were neutral and disagree.

**Conclusion:** During COVID-19, virtual teaching help the students to increased their knowledge and increased their willingness to learn. Which they might find useful later on when they go back to the medical college to continue their studies. However, around one-third of students believe that the pandemic has hampered their capacity for long-term planning.

**Keywords:** COVID-19, Impact, Medical Education, Phase II MBBS.

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### INTRODUCTION

In December 2019, the coronavirus disease 2019 (COVID-19) was first reported in Wuhan, Hubei Province, China. It is characterized by pneumonia-like symptoms. The virus spread exponentially, resulting in an outbreak throughout China and the world. Subsequently, on March 11, 2020, the World Health Organization declared it as a worldwide pandemic [1].

COVID-19 has caused unprecedented disruption to the medical education process and to health-care systems worldwide [2]. The highly contagious nature of the virus has made it difficult to continue lectures as usual, thus influencing the medical education process, which is based on lectures and patient-based education [3]. A number of experts across the world anticipated that COVID-19 will affect the population's health in psychological, social, and neuroscientific dimensions [4]. In-deed, the pandemic led in the general population to a high incidence of mental health disorders, such as acute stress, post-traumatic stress, anxiety, depression, irritability, insomnia, and decreased attention [5,6].

In India, almost medical schools have been suspended during the pandemic, and many students were staying at home to abide by social distancing guidelines. This has disrupted the medical education process and has increased the need to find alternatives. Challenges include a fear that medical students may contract the virus during their training and may transmit it to the community [7]. The pandemic emergency changed their life drastically. Considering university restrictions, indeed, teaching in presence was suspended. Only faculty and administrative technical staff were allowed to access the campuses. At the same time, online teaching service had been activated, through which lessons, exams, and thesis and doctoral dissertation discussions were carried out at distance [8]. Technology is being used rapidly and innovatively to keep

continuing teaching and learning. Availability of devices and internet connections was the other challenges for online learning platforms. However, some departments have started providing online lectures, study resource materials for medical students [9]. The introduction of competency-based medical education in the undergraduate curriculum requires regular assessment of student achievement. Medical schools have a great challenge to observe student performance or to hold large scale examinations. Formative and summative assessments for core knowledge have started to use a variety of online tools and platforms. The range is from websites, discussions forums, and online discussion spaces to real-time online chat and communication apps [10].

Therefore, we must develop a medical education curriculum that provides students with opportunities for continuous learning, while also avoiding delays due to the pandemic [9].

Assessment should be done for their feasibility and determine whether they are adequate in helping medical students to continue their education.

Hence, this study was planned to provide an overview of the pros and cons of COVID-19 impact on medical education of medical students. This study would help to improve online learning by making it more effective and innovative. The positive and negative feedback from students will enable us to explore deeper about how technology can be better used for online teaching and learning in future. Our study also highlighted the infrastructural and logistic issues faced by the medical students during COVID-19 pandemic.

### METHODS

A prospective, observational questionnaire-based online study was conducted by the Faculty of Pharmacology for Phase II Medical students

of Smt. Kashibai Navale, Medical College Pune. Online version of Google form was used. For ensuring the highest possible response rate, friendly reminder was sent. Questionnaire was self-administered and did not contain any personal data of participants.

#### Inclusion criteria

Phase II MBBS students were included in the study.

#### Exclusion criteria

The following criteria were excluded from the study:

- Students who are not willing to give Informed consent
- Questionnaires with incomplete information or missing data were excluded from the analysis.

#### Study design

A pre-validated questionnaire was designed to assess how COVID-19 pandemic impacted on medical education of Phase II medical students. Questionnaire consists of 21 of which one is open ended. This was questionnaire-based study started after approval from the Institutional Ethics Committee (SKNMC No/Ethics/App/2022/871). Google form was circulated. Sufficient time was given to read, comprehend and fill the Google form. Participation was voluntary and anonymous. Acceptance of response was done till the required sample size was obtained. Statistics were represented by percentage through a pie diagram and bar graph.

#### RESULTS

A total of 150 Phase II medical students were sent the online questionnaire out of which only 83 students responded (n=83). About 53% of students were in the city, 20.5% were in the village and 13.3% were at Taluka place and hostel during the COVID-19 pandemic.

During the pandemic, few students suffered from depression and mood swing (19.3%), while majority does not having any health-related issues. About 31.3% of students were comfortable while using computers, mobiles, and tablets.

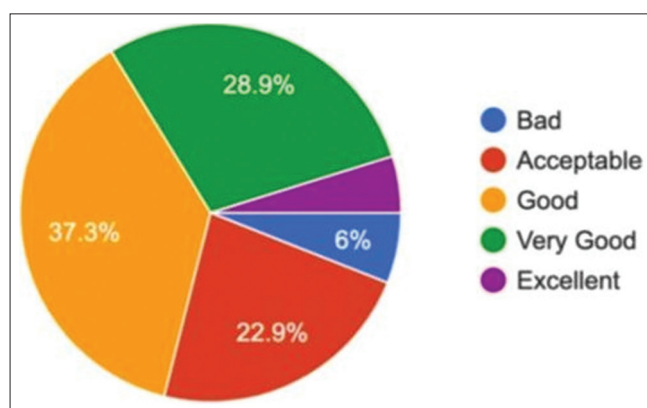


Fig. 1: Internet service during COVID-19 pandemic

According to only 6% of students internet connectivity was bad while it was acceptable for 22.9%, for 37.3% was good (Fig. 1).

Before COVID-19 pandemic, students were using YouTube as video tutorial. They also refer pre-recorded lectures and online question banks (Fig. 2).

During the pandemic, students educational program depended on lectures provided by the college. Furthermore, they use to do self-study with the help of various resource material and few were using resource material provided by department (Fig. 3).

Medical college introduced many teaching-learning platforms during the COVID-19 pandemic. New online learning platform was introduced according to 42.2% of students. Pre-recorded lectures, tutorials (33.7%), and live session on the Zoom platform (15.7%) were other modes of learning. Online sessions were effective according to 43.4% of students while they were not by 38.6%. Majority of students enjoyed online aspect of teaching because they do not have to travel. They also enjoyed due to flexibility and comfortability (Fig. 4). About 41% students unsure about online teaching will encouraged them as an active learner while 33.7% were agree on that and 15.7 % were disagree.

Compare to conventional teaching method overall experience regarding the online teaching was average of 62.7%, while it was excellent for 19.3% of students and poor for 13.3%. About 50.6% of students believed that online teaching helped them in achieving desired competency as per CBME, and 42.2% were disagreed. Resource material for the study was available on the learning management system which was beneficial for 74.4% students. During the pandemic, clinical training program was severely affected according to 88% of students. When asked about virtual simulation based education is superior than traditional clinical education majority given neutral response while few were disagreed (Fig. 5).

COVID-19 also had impact on the examination of medical students (74.7%). Furthermore, students were not able to learn practical skill online (77.1%). Study potential also limited (77.1%). Many students believed that this COVID-19 affected their future interest career plan while few were neutral and disagree (Fig. 6).

#### DISCUSSION

Due to social distance rules, practically, all medical schools in India were closed during the pandemic, and many students stayed at home. Their lives were significantly altered by the pandemic emergency. It is understandable that many healthcare organizations have turned to online learning resources in light of the emergence of COVID-19 though it was utilized before this pandemic. Traditional on-site teaching and learning cannot be assured on a long-term basis with the pandemic's re-emerging surges. Due to this students shifted to their native places. Only few students were in hostel. Anxiety and depression were more prevalent than usual among the population as a result of the pandemic, with prevalence rates of 32.9 and 35.3% in Asia and 23.8 and 32.4% in Europe, respectively [11].

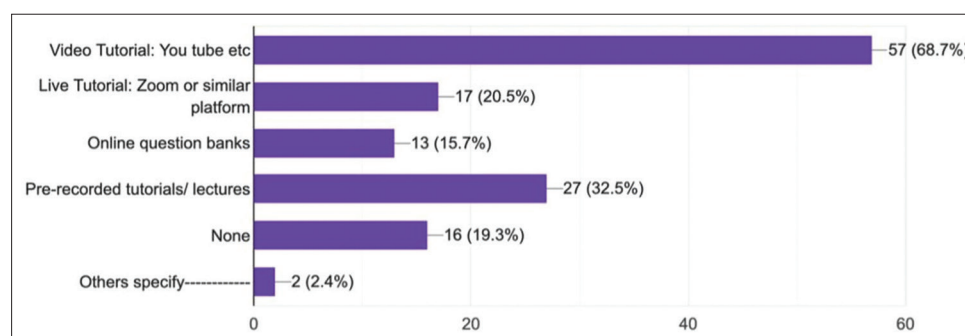


Fig. 2: Various educational program

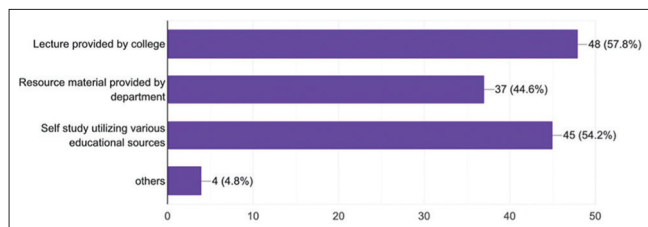


Fig. 3: During pandemic educational program was depend on

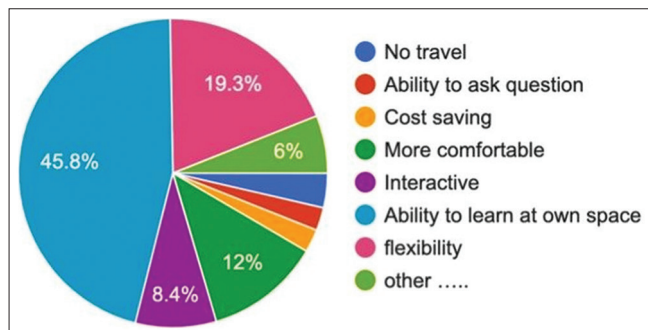


Fig. 4: Online teaching aspect which students enjoyed the most

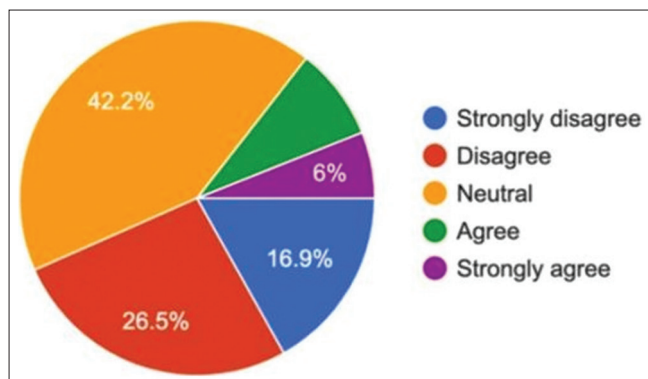


Fig. 5: Virtual simulation-based education is superior than traditional clinical education

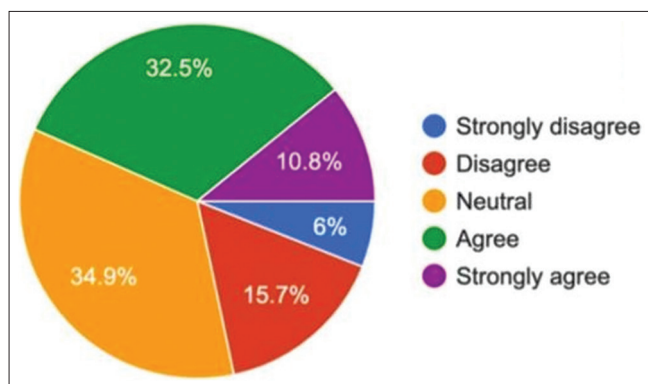


Fig. 6: Future interest and career plan affected by COVID-19

In our study, few students suffered from depression and mood swing (19.3%).

In the present study, nearly 59% of the students were satisfied with internet connectivity around them of which nearly 57% of students were studying by online teaching schedule run by the college. During the pandemic students studied using online maneuvers by the teaching

institutes which helped them to continue with academics and it has also helped these students to cope up with the stress caused by ongoing pandemic which has acted as a bridge for enhancing their knowledge. Wang *et al.* has also emphasized use of synchronous technology for enhancing students learning abilities during such period [12].

In the present study, only 6% of students accepted that virtual teaching was more effective than traditional teaching methods. While nearly 42% of students felt that both virtual and traditional methods helps them improve understanding level of the subject which may enhance the motor skills of students as well. Similar results were observed by Dodiya *et al.* suggesting use of virtual and traditional teaching will improve the learning abilities of medical students supporting observations of present study [13]. Similar results were also observed by Al Qhtani *et al.* suggesting combination of virtual and traditional that is Blended teaching in improvement of teaching-learning abilities of medical students but traditional teaching is having its own place [14]. In the present study, nearly 41.8% students were satisfied with the virtual training of the course as the training was provided at their own known place or infection free area mostly at their residents. This leads to stoppage of infection spread among the medical students at hostel or college premises. Similar results were conveyed by Seng won Park *et al.* to declare student education, medical schools may contemplate offering distant education with online technology which will benefit in both ways by encouraging students' education and avoid spread of infection [15].

In the present study, we observed that despite of taking efforts on virtual teaching has affected their future planning as compared to pre-COVID-19 era medical students due to lack of on ground practical's or patients interaction. Similar results were observed by Syal *et al.* a making a statement about hike in anxiousness and stress levels in medical students during pandemic [16]. Hence, more emphasis should be provided on teaching learning abilities of students to make brighter Indian medical education.

**CONCLUSION**

In the present study, we observed that during the pandemic virtual contact made by students boosted their morals toward studies and improved their knowledge. Which may also help them in the future for gaining clinical/practical knowledge after returning to the field. Blended education helped the students for overcoming their insecurities towards academics. However, matter of the fact is nearly one-third of the students believe that pandemic has affected their future planning as compared to pre-pandemic era students which has to be considered seriously and acted on for securing medical education which is beyond the scope and limitations of the present study.

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**CONFLICTS OF INTEREST**

None.

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None.

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