



ORIGINAL ARTICLE

## Perception of medical students to “NEW NORMAL” and its Reflection on their studies during COVID 19.

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**ABSTRACT... Objective:** To find the effectiveness of online teaching and its reflection on their academics during COVID19 pandemic in basic medical science. **Study Design:** Cross Sectional Descriptive study. **Setting:** University Medical and Dental College, Faisalabad. **Period:** March 2019 to November 2021. **Material & Methods:** A total of 531 undergraduate MBBS & BDS (1<sup>st</sup> & 2<sup>nd</sup> year) students were included. A questionnaire was designed and shared online in Google classroom to get students’ feedback. The data obtained was analyzed on SPSS 25 by using ANOVA and Chi-Square Tests. **Results:** 62.76% students declared that learning in physical classrooms is more understandable than e-learning, while 58% students were satisfied with this transformation of online teaching and secured better grades in e- assessments, while 69% students agreed with the fact that on campus assessment is more productive. According to our results 68.24% students preferred physical teaching and assessment methodology and 67.11% students agreed that team work with peers is more productive in on campus classes than e-classes. **Conclusion:** We investigated various aspects of e-learning experience of medical students and found a mixed opinion. By improving our infrastructure and using modern techniques we can make online medical education system more effective and productive for our students in future.

**Key words:** e-assessment, Education During COVID-19, Online Learning, Online Module.

### INTRODUCTION

Severe Acute Respiratory Syndrome (SARS)-CoV2, was detected in China in December 2019 and within few months its severity forced the World Health Organization to declare it as pandemic on 11th March 2020. Its rapid global spread irrespective of gender, age, profession, and socioeconomic status was not more than a nightmare.<sup>1</sup> Along with many other precautions, social distancing was declared the only way to slowdown the spread of virus by breaking its chain of transmission.<sup>2</sup> This critical situation forced the world for physical closure of all business activities, sports, social gatherings, and even the educational activities throughout the globe. From kindergarten to continuing Professional education, all institutions were closed and brought the world to a standstill. According to UNESCO by the end of April 2020, 73.8% enrolled students were affected by this lockdown situation around

the world.<sup>3</sup>

During this unpredictable circumstances, most of the academic institutions decided to shift from the traditional classroom teaching to online learning system to save the students, academic sessions.<sup>3,4</sup> This was a very challenging situation for which the world was not prepared, but for the sake of students’ safety institutions had to change their teaching methodology.<sup>3</sup> In developing countries due to lack of resources it was very difficult to shift completely to online system so many institutions used a hybrid approach to save student’s academic session. Like many other countries, Pakistan Higher Education Commission (HEC) also mandated that all public and private sector educational institutes should conduct their teaching and learning activities through online resources until the curve of COVID-19 is flattened in the country.<sup>4,5</sup>

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Online teaching and learning is not a novel platform but the shifting of patient-based education of medical schools to online learning system was quite challenging.<sup>6</sup> Technology played a key role in this e-learning process and the medical faculty started using online teaching platforms like learning management systems (LMS) and Microsoft teams for live audio-visual lectures, small group discussions on Zoom and Google Meet classrooms.<sup>5,6</sup> Although the institutions, faculty members and even students were not prepared for this transition from classroom-based education to online platforms but this was the only best solution in this challenging situation. This transformation was not very smooth both for students and teachers.<sup>7</sup>

In Pakistan this online teaching and learning process was started in third week of March 2019. Initially it was a slow process as the infrastructure of institutions were not technically UpToDate for online mode of teaching but gradually the management and faculty members prepared the students to cope with this “new normal” situation at their best.<sup>4,7</sup> Teachers uploaded all teaching materials on google classrooms and also engaged the students on zoom in small group discussions.<sup>6,7</sup> Scheduled live online video lecture with interactive discussion was the best possible alternative to traditional on campus lecture for medical students in this challenging situation.<sup>8</sup> Interruption in network, week signals, electricity shut down were the most common daily basis problems faced both by students and teachers.<sup>9</sup>

Apart from all these difficulties, this online teaching/learning methodology has some advantages as well which can't be ignored, as it provides time flexibility both to the students and teachers secondly it is more student-centered mode of learning than teacher centered and lastly the uploaded teaching material can be assessed by the students anytime, anywhere and along with this above all it also provides the opportunity of self-directed learning to medical students.<sup>10</sup>

Along with learning, assessment is a very important component of every education system so is true for medical students as well. According

to some education expert's assessment is evidence of the student achievement of various learning objectives.<sup>10,11</sup> Electronic Assessment (E-Assessment) is a very quick tool to judge the progress of student learning, although E-Assessment has many limitations and disadvantaged but in the present situation this was an essential tool to keep the students focused and engaged in studied. Multiple choice question (MCQs) based assessments were given at the end of each module to judge and grade the students learning and understanding.<sup>11</sup> In this unpreidential situation a study was designed to plot the perception of medical students on e- learning, its reflection on their studies and its comparison with on-campus education in basic medical science.

### Study Objectives

- To evaluate the effectiveness of online teaching methodology in basic medical science
- To compare the online teaching and assessments with traditional classroom teaching

### MATERIAL & METHODS

A Cross Sectional Descriptive Study was designed in a private medical college of Faisalabad from March 2019 to November 2021 after taking approval of institutional ethical committee (letter no TUF/IRB/139/2022). A questionnaire was designed in Google forms with reference to previous literature to get student's feedback.<sup>12</sup> The study participants were all 550 students enrolled in first and second year MBBS and 1<sup>st</sup> year BDS during this period as they all study physiology while rest of the medical and dental students were excluded from this study. The questionnaire was shared online in Google classroom with 550 enrolled students to get feedback, out of them 531 students filled the questionnaire and participated in this study. The data obtained was analyzed on SPSS 25 by using ANOVA and Chi-Square Tests.

### RESULTS

According to our data analysis and results (Figure-1) students had a mixed opinion about online and on campus education during the COVID-19 pandemic, however they preferred

physical classroom studies. Majority (62.76%) of the students are agreed with the fact that on campus lectures are more understandable than online. 58.22% students think that their participation is more in on campus classes and only 10.80% students felt that they were more active in online classes. Similarly 65.41% students are of the opinion that they are self-motivated and 62.40% think that their creative thinking abilities are more during on campus studies as compared to online. Majority (67.11%) students agreed that team work with peers is more productive in on campus classes while only 11.15% students found online classes more effective. Coming to the other side 59% students said that teachers are more enthusiastic during on campus studies while 32.51% declared that during e-classes teachers were more cooperative while 28.54% students remained neutral. Similarly majority of the students (62.32%) said that opportunity to ask queries during lectures is addressed more effectively during physical classroom as compared to online classes.

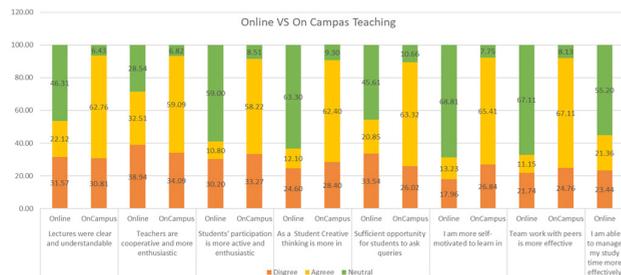


Figure-1

According to Figure-2, almost 71.1% students agreed that traditional on campus teaching methodology is more effective with a p value of 0.00 which is highly significant and 65% students declared that same should be the preferred teaching methodology in future with a p value of 0.00 which is again highly significant.

According to our results 69% students agreed with the fact that on campus assessment is more productive and effective for learning with a p-value of 0.001 (Figure-3) which is highly significant. On the other hand, 43.52% students are of the opinion that cheating/unfair means are more common in e-assessments while 33.27% disagreed it and others remained neutral. 68.24% students

(Figure-3) agreed that preferred assessment methodology in future should be on campus with a p-value 0.001 which is highly significant.

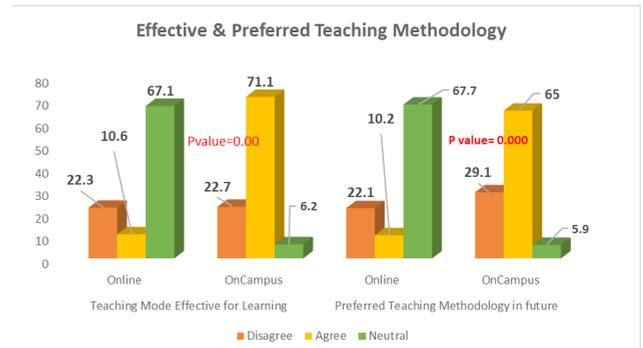
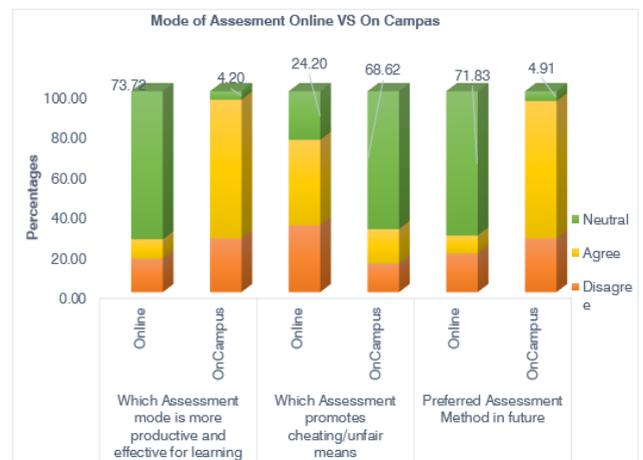


Figure-2. Effective and preferred teaching methodology



(P value determined by X2 test =0.001. p value less than ≤0.05 taking significant)

Figure-3. Comparison of online and on-campus assessments

Data analysis of comparison of assessment marks (Table-III) gives a Mean ± S.D 58.26 and 52.35 for online and on campus respectively which shows that students secured better grades in online assessment as compared to on campus although they were more satisfied with on campus assessment methodology.

**DISCUSSION**

The novelty in this study was to interpret perspectives of medical and dental students on new normal circumstances during COVID 19, outline its advantages, disadvantages and to identify the challenges encountered during this abrupt transition to online education.

Mode of Teaching	Frequency n	Assessment Marks Mean ±SD	Mean Difference	P-Value	95% Confidence Interval of the Difference
Online Teaching	403	58.26	5.90	0.003	3.83139 - 7.98779
On Campus Teaching	511	52.35			

**Table-III. Comparison of assessment marks between online & on-campus teaching**

We investigated various aspects of e-learning experience of medical students during online studies and its comparison with on campus education. Despite the fact that all medical students and teachers in our institution easily adapted these unpredictable circumstances and immediately shifted to online mode of teaching and learning to save their academic year but still there were many hurdles and difficulties faced both by the students and teachers. Students' majority do agree with the fact that their teachers were more active and enthusiastic during this online period while some of them were not satisfied. They also appreciated that all classes were scheduled according to the time table and their course content was covered accordingly but still they prefer that future methodology should be on traditional classroom pattern. This may be due to the fact that shifting to a new system was not an easy task both for students and teachers.

The e-learning program depends largely on the learning tools and technical support. Being an underdeveloped country, electricity shutdown, weak internet signals and lack of skills were the common hurdles faced by the users on daily basis. Few students belong to very remote areas where internet facilities were also not available. A successful online education without a reliable and robust technical infrastructure is not possible as proved by previous studies.<sup>14</sup> However apart from these there are many advantages too, as the students and teachers all experienced this new mode of teaching and learning for the first time on routine basis, which is already being adopted by many advanced nations of the world. This enhanced their computer skills and motivated the teachers to develop new strategies to engage the students during online classrooms along with completion of curriculum.<sup>15</sup>

Assessment being a very important component

of teaching and learning process can never be ignored, the purpose of assessment is to evaluate and monitor the student's abilities.<sup>11</sup> In our study 69% students agreed that assessments taken during physical classes were more productive and beneficial to them as compared to e-assessments, despite this fact when we compared the results of the students, we found that majority of them showed better results in online assessments as compared to classroom assessments. There are few opinions about it, firstly online assessment was in the form of multiple choice questions (MCQs) and to choose the best option is relatively easy task, secondly the study content given to the students was not very vast and as they were in their comfortable home environment so they must have prepared well and lastly many students face anxiety while sitting in examination hall environment and cannot perform better in exams than others.<sup>13</sup> But we cannot ignore this fact also that possibility of using unfair means are always there as they were not being supervised by teachers during online assessment so they may had used that. In reference to this fact about 43% students in our study agreed that chances of cheating are high during e-assessments as compared to classroom tests.

Majority (69%) of the students are of the opinion that on campus assessments are more productive and effective for learning and understanding the topics, that's why they recommended that in future assessments should be taken in campus. According to study carried out in Indonesia it is suggested that an effective online assessment can provide student-centered learning environment and can also increase students' involvement but this requires a proper trained platform both for teachers and students and there should be a vast central pool of questions along with a proper software programme and an infra structure on large scale to overcome the possible hurdles.<sup>11,17</sup>

About 65% students declared that when they study with peers they are more self-motivated and have better understanding while studying as a team than all alone at home. In this study we also found that majority of the medical students (62-63%) consider that critical thinking and creativity is more during physical classes and their queries are also addressed in better ways in face to face learning.

Similar results are also seen in another study conducted on undergraduate medical students in university of California during COVID-19 pandemic according to that study the majority (> 60%) of students felt that remote learning has somewhat negatively affected their ability of learning<sup>13</sup>, however by improving our infrastructure and using innovative teaching methodologies we can make online education more effective and useful for our students in future. This will also led the students to update their medical knowledge and skills on the basis of latest researches in field of medicine by using different available online resources.

## CONCLUSION

According to our study, students declared that traditional classroom teaching is better to enhance their critical thinking abilities and more understandable than online teaching and they also preferred that physical classroom assessments are more productive and effective for their learning as compared to online teaching system.

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No.	Author(s) Full Name	Contribution to the paper	Author(s) Signature
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2	Rahat Rehman	Data collection.	
3	Shama Iqbal	Proof reading.	
4	Shireen Jawed	Data analysis & Discussion.	