Online Learning during the COVID-19 Pandemic: Medical Students' Perspective of Challenges and Barriers

Loma Al-Mansouri[1], Firas R. Al-Obaidi[2,3], Noor Ahmed Abdullah

College of Medicine, University of Basrah, [1]Basra Oncology Center, [2]AL-Zahraa College of Medicine, University of Basrah, [3]Basra Cardiac Center, Basra, Iraq

Abstract

Background: Medical education has been affected significantly during the coronavirus disease (COVID-19) pandemic. During the pandemic, online learning functioned as the principal pathway of education at all levels of education for a considerable time. Online medical education has faced many challenges and constraints. **Objectives:** To evaluate the students' perception toward online medical education in Iraq and related challenges and limitations. **Materials and Methods:** This study is a cross-sectional, descriptive study to evaluate the challenges and barriers of online learning during the COVID-19 pandemic. We created an online questionnaire. The survey was introduced to undergraduate students in the medicine, pharmacy, dentistry, and nursing colleges from all stages at the University of Basrah, south of Iraq. The study was conducted in April 2020. **Results:** The total number of participants was 882 students. There were 438 (49.6%) females. The responses of the students showed different problems and limitations facing online learning. These were divided into student-, faculty-, and technical-related barriers. The survey showed that 77% of the students are facing difficulties with having internet or having low-quality internet services. In addition, there was a shortage of students' electronic devices mainly due to financial causes. The faculty-related were considered by the students (71.4%) to be mainly the deficient experience of the teaching staff in using digital resources. The students (49.4%) recommended online learning to continue in the future, blended with a classic education. **Conclusion:** The perception of medical students toward online learning was positive. The challenges and barriers to online education were related to students, faculty, and technical factors. The role of online learning can be promising in the post-COVID-19 era.

Keywords: Challenges and barriers, COVID-19, medical education, medical students, online learning, pandemic

Introduction

The unprecedented challenge of the coronavirus disease (COVID-19) pandemic enforced huge changes in our daily life. According to the WHO Coronavirus (COVID-19) dashboard, the number of confirmed cases is 591,683,619, and the number of deaths is 6,443,306 from the onset of the pandemic till August 2022.[1]

Medical education has been affected significantly, as many aspects of our life, during the pandemic. Creating alternative pathways and strategies for delivering medical education was crucial to avoiding the shutdown of medical schools. Online education and learning have progressed rapidly in the last few years.[2,3]

During the era of the COVID-19 pandemic, online learning functioned as the principal pathway of education at all levels of education, including under and postgraduate studies replacing the conventional teaching process for a considerable time.[4]

The change in the education approach has more impact on some specialties than others, and undergraduate medical schools are affected more.[5]

The sudden and unexpected surge in the utilization of online medical education has faced many challenges and constraints, which are far more in low and middle-income countries. This study evaluates the medical students'

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Address for correspondence: Dr. Loma Al-Mansouri, College of Medicine, University of Basrah, Basra, Iraq. E-mail: luma.abdullah@uobasrah.edu.iq

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perception of online education in Iraq and related challenges and barriers.

Materials and Methods

This study is a cross-sectional, descriptive study to evaluate the challenges and barriers of online learning during the COVID-19 pandemic. We created a standardized online questionnaire. The type of questions used included four response questions in the form of strongly agree, agree, disagree, and strongly disagree.

The survey was introduced to undergraduate students in all stages from colleges of medicine, pharmacy, dentistry, and nursing at the University of Basrah, south of Iraq. The study was conducted in April 2020, about 2 months after the onset of the pandemic in Iraq. The participants were reached through the university email using Google Forms. After informed consent, the responses were collected a few days after sending the survey. All responses were collected anonymously.

Statistical analysis

The data analysis was mainly descriptive and represented as frequencies and percentages.

Ethical approval

The study was conducted in accordance with the ethical principles that have their origin in the Declaration of Helsinki. It was carried out with participants' verbal and survey approval. The study protocol and the subject information were reviewed and approved by a local ethics committee according to document number E/S 24 on 02/01/2020.

Results

The total number of participants was 882 students with an age range is 18–26 years. There were 438 (49.6%) females. The rate of responses where high across all colleges and years of study. The majority of the participants (67.9%) were from the college of medicine. Other students were from the college of dentistry (17.3%), the college of pharmacy (8.5%), and the college of the nursery (6.3%) [Figure 1].

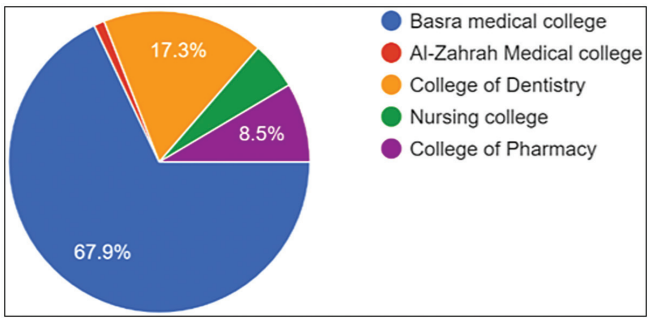

Figure 1: The participants' colleges

The responses of the students showed different problems and limitations facing online learning. These were divided into student-, faculty-, and technical-related barriers.

The student-related aspects are internet access and social and technical factors. The major limitation of online learning is the access to and quality of the internet. The survey showed that 77% of the students are facing difficulties with having internet or having low-quality internet services. In addition, there was a shortage of students' electronic devices mainly due to financial causes [Figure 2].

The lack of social interaction and isolation from the community was reported by 60.2% of the students.

The chance for active involvement in discussion is limited. During online learning, 56.8% of the students are unable to ask or answer questions and clarify specific points in the lectures or seminars due to many participants, competition, and technical issues. The time required with online learning is considered more prolonged in comparison with face-to-face education, according to 51.6% of students. A large proportion (47.1%) of students expressed limited technical experience with online learning, which led to difficulties with online learning. Furthermore, lack of group study and direct contact with the faculty and lecturers have been considered a significant limitation during online learning by one-third of students (34%) [Figure 2].

The faculty-related factors affecting online learning were considered by the students (71.4%) to be mainly the deficient experience and limited training of the teaching staff in using digital resources for online teaching. A similar rate of responses (68.2%) considered the lecturers and teaching staff lacking interest in online teaching and presenting low-quality lectures online in contrast with on-campus ones. Scheduling educational sessions using online learning is one of the challenges, as 65.6% of the students face disorganized and sometimes confusing timetables. The local experience of the information and technology staff in the university and the colleges are considered by 61.7% of the students as inefficient in managing the process of online education [Figure 3].

Another difficulty facing online learning is the technical-related problems associated with online platforms such as Google Classroom and Zoom. About 91.6% of the participants considered the available online platforms cannot fulfill the needs of the students with an increasing number of technical issues during examinations and assessments. An important limitation of online learning is the inability to cover all the educational courses, as the clinical and laboratory courses cannot be delivered adequately by online channels, according to 83.6% of students. One of the barriers was using different online platforms and applications for teaching, causing distraction and confusion, according to 63.9% of students [Figure 4].

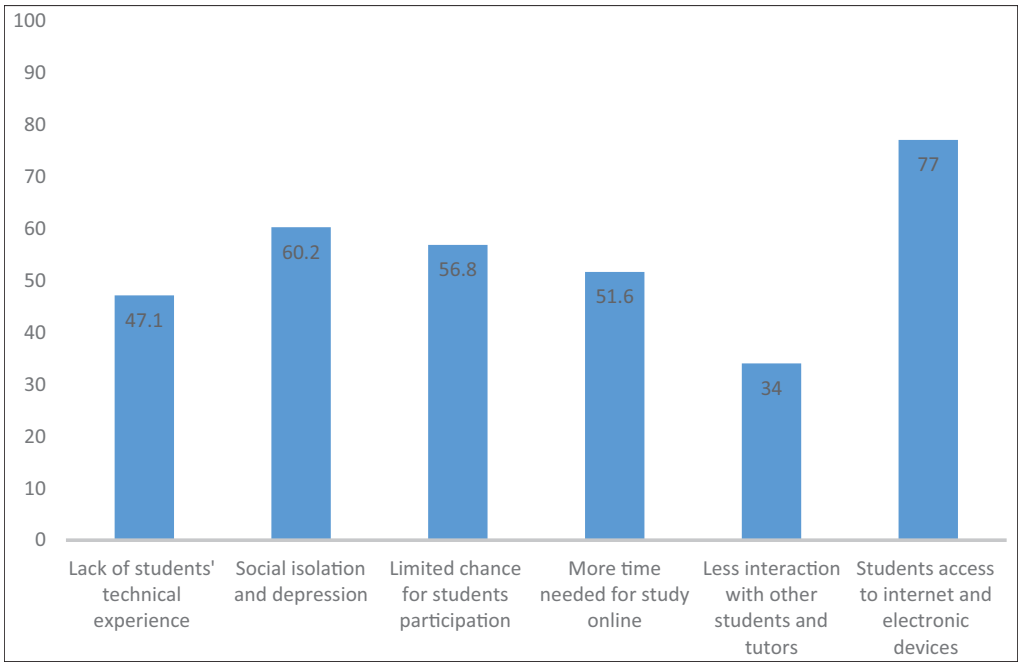

Figure 2: The responses showing students-related challenges and barriers to online learning

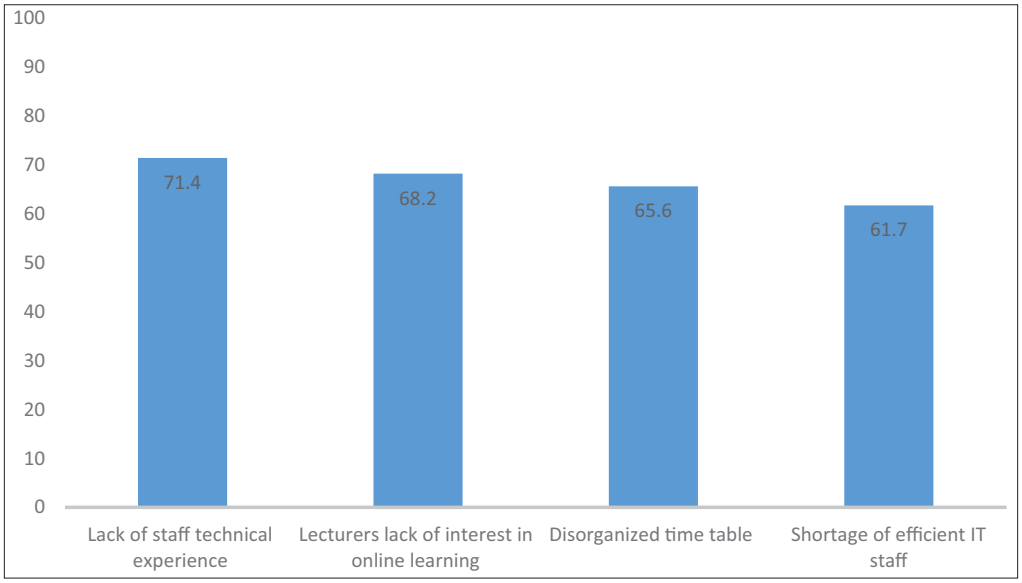

Figure 3: The responses showing faculty-related challenges and barriers to online learning

Only a minority of students (18.9%) were satisfied with the experience of online learning during the pandemic. However, 51.5% of the students consider online learning as a good substitute for classic education during the lock time enforced because of COVID-19 infection. Similarly, 49.4% of the students recommended online learning to continue in the future, blended with classic education and resolving all the problems that face online learning.

Discussion

The utilization of online medical learning and education was present on a limited scale before the COVID-19 pandemic, especially in low- and middle-income countries. The use of blended education (online learning and face-to-face) varies between different educational facilities according to the available resources. The main reasons for the limited use of online learning are deficient infrastructures due to unequipped classrooms and study halls, low-quality internet and digital devices, etc., and the faculty staff and information and technology personnel with limited experience in this field.[6,7]

Our study investigated the perceptions of undergraduate students in the medical, pharmacy, dentistry, and nursing schools of the University of Basrah. We conducted the

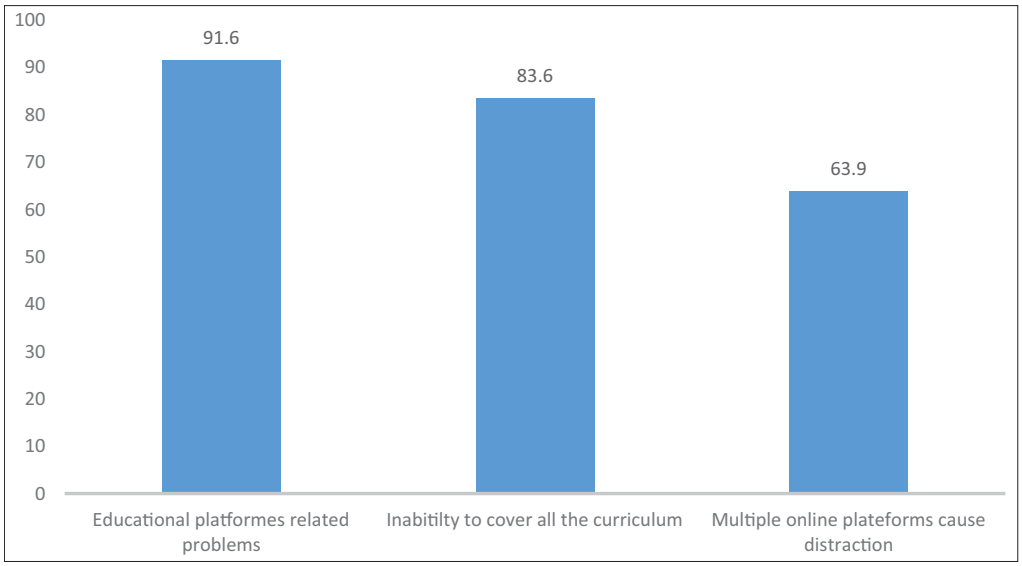

Figure 4: The responses showing technical-related challenges and barriers to online learning

study early during the COVID-19 pandemic when the impact of social restrictions and isolation was very high, leading to massive changes in human life globally. The results showed half of the participants have a positive attitude toward online learning. Furthermore, they recommended the future integration of online learning with classical education. The study indicated the main challenges of online learning, which were related to the infrastructures of the university, the experience of the faculty staff with online learning, and the student's technical and social difficulties during the pandemic.

Similar studies have shown the attitude of medical students toward online learning. In Saudi Arabia, 41.8% of students reported no previous experience with online learning before the pandemic. The main challenges were related to communication difficulties and students' assessment, according to (59%) (and 57.5%) of respondents, respectively.[8] In Jordan, the main challenges were internet quality (69.1%), poor interaction with lecturers (62.1%), and low-quality teaching (48.3%).[9] In Sudan, medical students (38%) considered the quality of the internet as the main challenge of online learning. Other challenges were technical support and timing issues (24%), lack of previous experience (22%), and lack of direct contact with other students and faculty staff (15%).[10] In Uganda, negative attitudes toward online learning were reported by half of the students. The barriers were similar to those in other low-income countries, including the availability of digital devices, limited electronic skills by the students and staff, and internet quality.[11,12]

In Bahrain, the rate of satisfaction with online learning was high (60%), mainly in the theory part, but lesser with clinical and skills-acquiring education.[13]

The COVID-19 pandemic enforced innovation to continue medical education. Although online learning was a successful pathway, the limitations and challenges are significant and need to be addressed, especially from the students.[14,15]

Continued implantation of online learning during the long period of the pandemic has led to better experiences and skills in medical and health sciences schools. However, training the students, educational staff, and IT personnel are necessary to derive all the benefits of online learning after the pandemic. We believe the role of online learning will progress to be an essential part of medical education with a positive impact on learning outcomes.

Conclusion

Online learning during the COVID-19 pandemic was an alternative due to social restrictions. The attitudes of medical students were positive in Iraq. The challenges and barriers to online education were related to students, faculty, and technical factors. The role of online learning can be promising in the post-COVID-19 era and to be integrated with classical education.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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