

IDENTIFYING BARRIERS IN E-LEARNING A MEDICAL STUDENT'S PERSPECTIVE

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ABSTRACT

Objective: To recognize the barriers in different modes of e-learning, from the medical student's perspective during the period of Covid 19 pandemic.

Methods: This Quantitative, Descriptive survey was conducted at Islamic international medical college and Islamabad medical and Dental College after taking permission of ethical committees. A questionnaire was designed for data collection. Common barriers were identified along with the factors underlying these problems. A questionnaire comprising of closed-ended questions was designed, and its content validity was checked after presenting it to at least five faculty members, and then it was presented to the participants. Data collection was done and results were composed using SPSS.

Results: E-learning saves time and is cost-effective and can save costs on transport and time consumed in travelling along with its stresses 22.3 % of students agreed with it. 47.2% of students did not agree with it. While 29.0% answered with sometimes. Regarding the concern about the validity of online teaching and assessment, 21.1% of students agreed and thought it was valid. 39.5% of students answered that it was not. 37.9% answered with sometimes.

Conclusion: Medical students were not very **experienced** to this type of teaching, so they found it less interesting and faced problems due to a lack of competency in using the gadgets and had difficulties in understanding of the course content as well as solving their queries regarding the syllabus.

Keywords: Barriers, e-learning, course, technology, medical students.

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INTRODUCTION

The coronavirus disease-2019 (COVID-19) pandemic has many effects on various sectors all over the world. One of its major impacts include the shift to e-learning due to the closure of schools and universities. Although E-learning has different meanings and interpretations, its principal aspect is to use technology to provide online access to learning resources to facilitate learning^{1,2}. E-

learning can be facilitated through audiovisual elements since it can provide students with various kinds of educational content, any information relevant to that and can therefore, provide an environment conducive to learning.

Medical education has been greatly impacted by the pandemic globally. Medical education has many established pedagogical approaches which consists of face-to-face interaction in classroom and this itself is a teacher-centered model^{3,4}. According to a study, medical students in clinical years believed that e-learning helped and facilitated the learning of clinical skills. On the other hand, academic institutions in developing countries have been struggling with e-learning. Here the challenges presented by e-learning in medical education consist of

lack of resources in terms of infrastructure (gadgets and internet) and experts which are required to implement this new learning method^{5,6}. Combination of various factors influence whether an online learning platform will be successful or will fail to deliver, which includes a wide scope of student led factors to staff led factors. In this age, medical students are expected to not only have a traditional clinical education but also one making use of the latest technologies in order to facilitate them in the workplace. Therefore, digital literacy has now become necessary^{7,8}. These challenges act as barriers which can hinder the utilization of this platform. Our study was planned to understand the students' perspective since doing so will enable government and decision makers in coming up with solutions in order to remove the barriers.

METHODS

This Quantitative, Descriptive survey study was conducted in medical colleges of Rawalpindi and Islamabad district. Islamic international medical college and Islamabad medical and dental College. A total of 400 medical students were included using simple random sampling technique. A questionnaire was designed for data collection comprising of closed ended questions. Common barriers were identified along with the factors underlying these problems. Suggestions were given to overcome these problems. The results were composed at the end by using SPSS version 21.

RESULTS

Competency in the usage of technology and internet is the key to the E- learning. Only 7.9% of students were competent to practice the technology and internet form. 21.6% of students were never competent. 26.1% answered with rarely. 32.4% answered with sometimes. 10.6% responded with often, so the students should be giving training regarding the usage of internet services.

The 10.1% of students found E-learning system was useful to fulfill their academic learning. 11.8% of students answered never. 24.2% answered with rarely. 36.2% answered with sometimes. 16.3% responded with often, so the students should be given training regarding the usage of E-learning system.

The E-learning system being used was found, compatible with the course contents by 8.9% of students. 11.5% of students answered never. 34.3% answered with rarely. 26.6% answered with sometimes. 17.3% responded with often. Only 6.0% of students found the E-learning system being practiced in their institution was well planned to satisfy their learning objectives. 12.2% of students answered never. 29.3% answered with rarely. 38.4% answered with sometimes. 12.7% responded with often.

10.3% of students felt comfortable with the features of E-learning system being used. 14.6% of students answered never. 27.1% answered with rarely. 31.2% answered with sometimes. 15.3% responded with often.

The e-learning system provides sufficient learning resources to control their distinct learning was found by 11.0% of students, 7.9% of students answered never. 30.5% answered with rarely. 34.5% answered with sometimes. 14.6% responded with often and

The design and interface of the e-learning system used is smart and suitable was found by 8.6% of students. 13.2% of students answered never. 33.1% answered with rarely. 31.2% answered with sometimes. 12.5% responded with often.

6.2 % were not able to identify their personal learning preferences on an e-learning course". 11.8% of students answered never. 21.6% answered with rarely. 40.0% answered with sometimes. 18.9% responded with often 5.3% of students needed guidance to select their personal learning choices for an e-learning course. 16.1% of students answered never. 27.8% answered with rarely. 40.8% answered with sometimes. 8.6% responded with often.

13.2% found the E learning system, against their learning preference. 26.1% answered never. 15.6% answered with rarely. 34.1% answered with sometimes. 9.6% responded with often and 10.3% of students, found that E-learning is less interesting as compared to conventional learning. 29.5% of students answered never. 18.7% answered with rarely. 28.3% answered with sometimes. 11.8% responded with often.

11.0% of students found that E-learning results in lack of interaction among the colleagues and is less creative. 30.5% of students answered never. 19.9% answered with rarely. 27.8% answered with sometimes. 9.4% responded with often.

Regarding the motivation of students by the use of E-learning, to use computers and the internet and in turn ease their access towards latest knowledge and 8.4% answered with always. 18.0% of students answered never. 28.8% answered with rarely. 30.9% answered with sometimes. 12.5% responded with often

8.6% of students found that use of technology leads to tiredness and decline in working capacity. 31.9% of students answered never. 20.1% answered with rarely. 25.4% answered with sometimes. 12.5% responded with often.

10.6% of students found that Interruptions in the internet connectivity affect the learning process leading to distraction". 40.8% of students answered never. 19.7% answered with rarely. 20.1% answered with sometimes. 7.4% responded with often

E-learning saves time and is cost effective and can save costs on transport and time consumed in travelling along with its stresses, 12.0% of students answered with always. 25.9% of students answered never. 21.3%

answered with rarely. 29.0% answered with sometimes. 10.3% responded with often.

Regarding the concern about the validity of online teaching and assessment, 6.7% of students answered with always. 21.3% of students answered never. 18.2% answered with rarely. 37.9% answered with sometimes. 14.4% responded with often.

DISCUSSION

This review identified certain key barriers in the successful implementation of e teaching from the medical student’s point of view. It was a multicenter study and we tried to synthesize evidence of barriers including technical skills, physical barriers, curriculum problems, personal perceptions and learning disabilities from the student’s perspective^{9,10}.

Students usually show an inertness towards this type of learning but may deliberate its practice when effectively implemented.¹¹ In our study students show a positive trend towards e learning and only a small group considered it boring or expressed their disinterest. Certain skills also present hindrance in the e learning programs like poor command on the gadgets, technical problems and distractions that students face during their course of e learning.¹² Students also perceive that content of education being delivered by e learning should fulfill their basic needs and they emphasize the need for blended learning while considering it more appropriate to be taught by online teaching method.² Many barriers explored here compliment the studies performed prior to it in the health professions education. For instance, Childs et al.¹³, debated the barriers faced by health professionals and medical students and evidenced the technical skills as barrier to be learning. Poor educator skills were also perceived as barrier by Patterson and Olofsson.¹⁴ Therefore it is highlighted that institutional support to remove the barriers and updating and maintaining the e learning program is of extreme importance. In the UK, students experience more e learning platforms for a longer time as part of their curriculum and the students satisfaction is an important factor in their environment so they tend to make gadgets more user friendly for easy approach of their students.^{15,16} Due to increasing trend of online lectures it is also proposed that studies in future should focus on identifying specific barriers in e learning and allocating more resources to overcome these hindrances in e teaching and learning.^{17,18} In another study the students express their view that basic knowledge can be delivered by self-teaching but higher order skills like synthesis or evaluation of knowledge are better delivered by tutorials. Medical educators should make sure engagement of the students with the online self-directed component. This

ensures that the students are able to fill the gaps in their knowledge which may enhance their interest and understandings. Another evidence is that learners are frequently biased in how they select new information to learn and therefore it is usually needed to have a prescriptive balance between cognitive demands of the students and uttering the most important points within the learning material.^{18,19}

The curriculum and content eminence has the utmost effect on student’s satisfaction. Every time, if the quality of the curriculum content of the e-learning course is good, users are more interested and gratified with the use of it. It is also noted that activities such as settings, discussion, collaborative learning tools, possibility of class dialogues and others in e learning systems can result in enhanced user contentment and henceforth higher acceptance¹⁵. Accessibility of complementary resources and integrated communal learning elements¹⁶ supports to make the e-learning system user friendly. In another study conducted by Bhuasiri et al²⁰ have proven the importance of curriculum design for education performance in an e-learning milieu. This was also noted that learning was being affected by the system of college, if it is well understood by the students then student’s interest was increased as compared to the circumstances where they find it more difficult to access the gadgets or communication with their teacher. This was also observed in a study conducted by Raouf, Naser and Jasim,²¹ which substantiated the organizational compatibility having an inverse relationship with e-learning adoption. This indicates that, more multifarious organizational compatibility will prime to e-learning being less adopted.

CONCLUSION

Medical students have experienced e learning during the Covid 19 pandemic for the first time. They were not very much **experienced to** this type of teaching so they found it less interesting and faced problems due to lack of competency in using the gadgets and had difficulties in understanding of the course content as well as solving their queries regarding the syllabus. Their peer learning was also affected further leading to decreased understanding and losing their interest in the course. In spite of the fact that they had found this type of learning cheaper in view of transport charges and time consumption but still they do not seem to be completely satisfied with this type of learning. Students also expressed their concerns regarding assessment of such type of learning and it seemed that blended type of learning may be more engaging and satisfying the student’s needs as compared to e-learning only.

ETHICAL APPROVAL

The study was approved by the Institutional Review Committee of Islamic International Medical College, Rawalpindi via App#/Riphah/IRC/20/249. Dated November 05, 2020.

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