

E-learning During Covid-19 Pandemic: Obstacles Faced by Medical Students and Its Effect on Their Learning Attitude

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ABSTRACT

Covid-19 has had a serious impact on students, instructors, and educational organizations around the world in many other aspects of daily life. It could not happen overnight to move from an environment of conventional education to distance and e-learning. At this stage, this rapid transformation is linked to different barriers and challenges. This study aimed to examine the association between medical students' attitude and obstacle during e-learning. This was a cross-sectional study at the Al-Azhar Islamic University, Mataram, West Nusa Tenggara. A total of 260 medical students was enrolled in this study. The dependent variable was learning attitude. The independent variable was learning obstacles. Data were collected using a questionnaire and analyzed using Chi-square. Medical student's attitude was associated with obstacles they faced during e-learning Covid-19 ($p=0.001$), and it was statistically significant. Most of the student's obstacles reported were the time limit for collecting assignments was not in accordance with the material load provided and the difficulty of learning clinical skills labs through an online class. In conclusion, Obstacles of e-learning affect the learning attitude among medical students.

Keywords: *medical student, e-learning, obstacle.*

1. INTRODUCTION

The Covid-19 pandemic has opened up new learning opportunities that never existed before. Although many of these activities are free of charge or cheap, the savings in travel costs make even with fees still appealing to those with limited financial resources [1]. In the early of the Covid-19 pandemic, the study environment shifted from traditional to electronic learning (e-learning) to prevent and stop the spreading of the Covid-19 virus. When compared to the alternative of school closures, e-learning has proven to be a valuable tool to keep studying during the closures [2]. Unfortunately, the Faculty of Medicine at Al-Azhar Islamic University never really implemented e-learning. Thus, this situation becomes real challenges for the medical education unit.

Further, there are still concerns if e-learning may optimally replace for face-to-face learning, particularly in the absence of universal access to infrastructure (hardware and software) and a lack of adequate teacher

and student preparation for the specific demands of online teaching and learning [2].

For instance, most classes are carried out virtually using the Zoom application. In fact, the use of this application requires enough amount of money. In addition, uneven access to computers and internet access needed for e-learning is one of the most significant opportunity gaps. Some students find it almost difficult to learn during the pandemic due to this digital divide [3].

Medical education is even more complex and stressful because it requires sufficient hard and soft skills, which e-learning cannot accurately reflect [4]. Some of the medical students can be easily bored during study time because they keep on staring at their laptop without interacting with the real person. E-learning has drawbacks in the sense that it can hinder contact between the learner and the tutor. As a result, there is a lack of direct communication and human interaction. Both teachers and learners can experience several technical

issues that interrupt and slow down the teaching-learning process [5].

The aforementioned case might affect their attitude toward e-learning. This study aimed to examine the association between obstacles on e-learning and medical students' attitude during the Covid-19 pandemic.

2. SUBJECTS AND METHOD

2.1 Study Design

A cross-sectional study was conducted at the Faculty of Medicine, Al-Azhar Islamic University, Mataram, West Nusa Tenggara, Indonesia. The data were collected from July to August 2020.

2.2 Population and Sample

This study involved 260 students from the Faculty of Medicine at Al-Azhar Islamic University. The medical students involved in this study were voluntary willing to participate. The sample was recruited using convenience sampling technique.

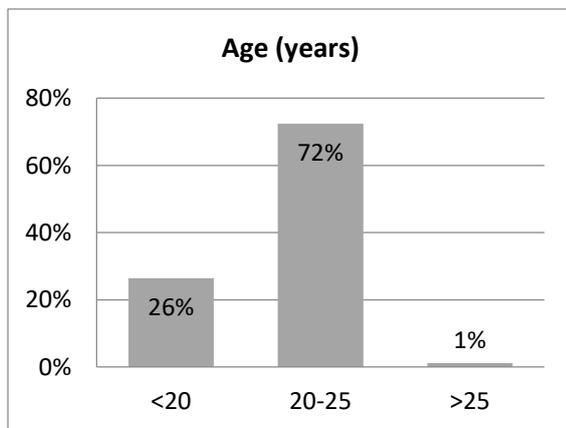
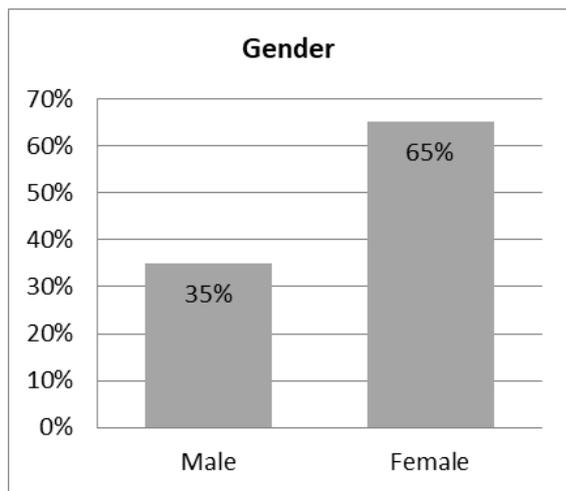


Figure 1. Student characteristics (gender and age)

2.3 Study Variables

The dependent variable was e-learning attitude, while the independent variable was e-learning obstacles.

2.4 Study Instruments

The data of this study were collected using online questionnaire through Google form. Participants were asked to participate without being forced to do so. Before the question page, the informed consent was described on the first page of the Google form description. The link of Google form was distributed by WhatsApp group. The questionnaire about obstacles during e-learning containing seven questions and questionnaire about attitude of students during e-learning were eight questions. The data was collected using a set of closed-item questionnaires with five options on the Likert Scale. The response scales interpretation was 1= “strongly disagree”, 2= “disagree”, 3= “neutral”, 4= “agree”, 5= “strongly agree”.

2.5 Data Analysis

The data obtained from this study were carried out using the questionnaire. The questionnaire was designed with closed questions and delivered online (Google form). Having collected, the data were analyzed using the bivariate analysis, i.e., Chi-square.

2.6 Research Ethics

This study was conducted based on the research ethic permission from the Faculty of Medicine, Al-Azhar Islamic University, Mataram, West Nusa Tenggara with No.: 30/EC/FK-06/UNIZAR/VIII/2020.

3. RESULTS

The student characteristics in Figure 1 shows that more female students participated in this study (169 students) than male students (91 students). Most of the students were around 20 to 25 years of age (187 students).

This study revealed that some of the students faced severe to moderate obstacles during e-learning. 219 medical students were reported to have positive attitude toward online learning while the rest indicated a negative e-learning attitude. Further, 192 students had a moderate obstacle while 27 others had severe obstacle during e-learning.

Table 1. The results of Chi-square analysis

Variables	E-learning Attitude				Total		OR	p
	Positive		Negative		N	%		
	N	%	N	%				
Obstacle								
Moderate	192	88	18	44	260	100	2.98	0.001
Severe	27	12	23	56				

As shown in **Table 1**, there was a relationship between e-learning obstacles toward students' learning attitude during the Covid-19 pandemic, and it was statistically significant ($p= 0.001$). The odds ratio (OR) was reported 2.98 unit. It means that more obstacles faced (severe) by the student's tend to increase the negative attitude during e-learning by 2.78 times higher than students with fewer obstacles (moderate) during the Covid-19 pandemic.

4. DISCUSSION

This study affirmed that some of the medical students had problems with e-learning, i.e., internet signal and internet fee. Other obstacles of why they could not fully attend the e-learning because of home duties and social media. Another study reported that insufficient computer facilities, internet access issues, institute experiences with e-learning, poor attitudes among students and lecturers, and incompatibility of mobile devices with university online management systems are all problems that occurred in Sub-Saharan Africa [6,7].

Some of the students could afford to minimize the obstacle or have no obstacle at all, while others could not. Further issues included the possibility that the effectiveness of e-learning has been undermined in some cases by a lack of basic digital skills among some students and teachers, leaving them unable to adjust to the new situation too quickly [8]. E-learning obstacles was identified as a lack of resources and a student's personal preference for e-learning. Another obstacle, according to one-third of the participants, is a lack of computer knowledge and adequate preparation [9].

The results of this study were supported by Male et al., it has been reported that students who learn from home through e-learning are often bored. The study's

objective is to look into undergraduate students' attitudes toward e-learning, as some of them are unfamiliar with it. A significant number of students reported prefer traditional teaching [10].

A study from India reported that to make e-learning more feasible for nursing/medical students in India, the information and communication infrastructure must be strengthened. To enhance student retention and minimize health problems, guidelines (length of each class, break between classes, curriculum) should be developed. To make e-learning successful, teachers and students will need to provide continuous feedback [11].

E-learning has a strong acceptance rate and is successful at growing awareness. It is important, however, to concentrate not only on expanding awareness, but also on clinical and social skills. Besides, e-learning should provide not only the delivery of content, but also the opportunity for students to engage with the materials and gain feedback [12].

The Covid-19 pandemic, on the other hand, has supported schools and colleges in creating ground-breaking e-learning solutions that will revolutionize medical education. The incorporation of e-learning into existing curricula is bound to be difficult, however, it is the only choice for preserving the chain of learning during the Covid-19's enforced lockdown [4].

5. CONCLUSION

Obstacles of e-learning affect the learning attitude among medical students. Further study is needed to examine the other factors that will respectively associate with e-learning behavior among medical students.

AUTHORS' CONTRIBUTIONS

Ayu Anulus, Artha Budi Susila Duarsa, and Dasti Anditiarina contribute equally to this study. The study was planned by all authors. The authors also collected the data, interpreted the findings, wrote the discussion, concluded the paper, and submitted it.

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