Students' Perception towards the Challenges of Online Learning during COVID-19 Pandemic in Female Health Faculties at King Abdulaziz University

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ABSTRACT

Background: *The COVID-19 pandemic has brought about a major, unplanned change in several areas, including education. Rapidly shifting from traditional education to e-learning is the best solution during this crisis. Therefore, this study aims to evaluate the challenges of online learning during the phase of the ongoing pandemic (COVID-19 period) from the perception of students.* **Methods:** *Quantitative descriptive cross-sectional design, electronic questionnaire. This research was conducted in health faculties on the female campus at King Abdulaziz University. A random sampling technique was applied; the sample size is 335 students of health faculties at King Abdulaziz University in Jeddah.* **Result:** *45.4% of the participants are from nursing and medicine colleges and the ranged of age is 19 years old most of them believe that e-learning is considered a barrier because of the distance and the suffering from the noise at home which disrupts their concentration.* **Conclusion:** *The research study concluded that the challenges are affected by the socioeconomic, low digital competence for students and faculties, heavy workload, and financial and time costs. The researchers recommended that the study is on the effect of e-learning on the practical performance of the health faculties students.*

Keywords: COVID-19, Pandemic, Online learning, Challenges, E-learning, Perception, Health faculties, Students

INTRODUCTION

Background

The pandemic of COVID-19 started in 2019 in China more specifically in Wuhan city and spread quickly throughout the world in a few months. All life aspects affected by this pandemic, involve education. To follow the educational lessons safely online classes were announced by the Saudi Ministry of Educational to all educational stages including medical majors [1]. This critical unplanned change from the traditional way of learning to online learning has transformed the protocols of medical colleges in courses delivered to their students. Medical students in the COVID-19 pandemic are depending on electronic books and PowerPoint to be explained to them and exams are based on the computer. These teaching modalities evolution has been adopted by multi-medical colleagues around the world [2].

The classifications of online learning are synchronous and asynchronous. In the synchronous model, live interaction occurs between the students and the instructors for example video conferencing, audio conferencing, and web chats. On other hand, the asynchronous model includes slow communications and marked lateness in time among instruction and its receipts such as Email and prior video recording [3]. Online learning may consider a challenge for students due to a lack of non-verbal communication. Other things were taken into consideration, for example, the interactions between the students and professors, the availability of resources, and time management, all of these aspects could affect online education students' opinions [4].

Literature Reviews

For students' performance investigation in an online course and face-to-face courses, the researcher should make a comparison for both education ways. Some studies looked at these manners, one of them was a study that included using a dataset of many courses that were being taught at 23 colleges in Virginia's community college. The authors found that students' performance and grades were better in the face to face courses compared to online courses [5].

A study was done by Unaizah College of Medicine and Medical Sciences to assess the effect of online technology in lecture illustrations, discussions of the cases, online seminars, and online laboratory demonstrations, this study concludes that the medical students were well-received the online learning. On the other hand, there were some limitations in study participants such as technical issues, individual receiving of the information, the barriers of institutional methodology, and lacking non-verbal communication [6].

On the other hand, Khan MA, implemented research about university students' realizations towards E-Learning in the time of the COVID-19 Pandemic and the study showed students' preferences for e-learning because it supplies easy communication to instructors and fellow students, quickly academic content sharing, and give flexibility regarding in time and place also ease of compiling educational resources. The research found that students tend toward e-learning and they saw e-learning as similar to traditional education [7].

A study assessed and identified the barriers that pharmacy students at King Saud Bin Abdul-Aziz University for Health Sciences see in online learning during the quarantine period achieved a quick adaptation and good acceptance by the pharmacy students for this teaching method and the students were satisfied because distance education led to continuity of study despite the COVID-19 pandemic this study found some gaps and some defects such as motivation lacking, lack of feeling enthusiastic while online classes and some of them need a longer period to adapt to this new educational method but they saw with the evolution process the on line method might improve [8].

A study on e-learning difficulties conducted in a Ghanaian University concluded that some students were not prepared for this educational method, on the other hand, some of them faced difficulties such as disrupting the Internet, lack of smart devices or laptop computers, on the other hand, it was good for some in terms of occupying students, spending their time studying, and not delaying their academic term [9].

Another study indicated that students are satisfied with distance education as it may be beneficial to universities that are large in number, so the information is communicated through the Internet to everyone with easy techniques and they indicated to students that the method of explaining the teacher and presenting educational materials satisfactorily and the tools used all contribute to student satisfaction and increase their interaction [10].

Another study indicated that a larger number of the students demonstrated positive performance toward receiving scientific curricula online during the COVID-19 pandemic. The study found that e-learning has many benefits for learners as it makes learners more comfortable and flexible. Students favored the scientific materials and recorded videos that were stored on the university's websites; they also demonstrated their need for interactive classes, assignments, and quizzes at the end of each lecture to support their learning. On the other hand, the majority of learners stated that e-learning faces many challenges that do not exist in traditional education, due to technical problems and the lack of responses, and also because of the teacher losing the skill of dealing effectively with technology [11].

The study was aimed to determine the perceptions of learners and teachers towards e-learning, the study found that the majority of learners and teachers showed a positive perspective towards e-learning, which provided an opportunity for e-learning to continue after the Corona pandemic [12].

Another study indicated that distance education is a very useful learning method. The students' answers obtained through the questionnaire showed that distance education is useful in increasing information and knowledge, and that e-learning is high approval. On the other hand, the focus should not be placed on increased information but also clinical performance. The focus of distance education should not be on presenting scientific material only, on the other hand, learners must be able to deal with the scientific material and receive responses [13].

Statement of Research Problem

At the beginning of this pandemic COVID19, many aspects of human life changed, including health, economic, social, psychological, and educational, as all countries made decisions on the continuity of education through e-learning,

which led to challenges that affected the academic performance of students. One of those countries is the Kingdom of Saudi Arabia so, it becomes more important to evaluate the perception of students' challenges towards this novel teaching methodology. The literature has shown students' proficiency in e-learning, the effect of e-learning in lectures, laboratories, and exams, and a comparison between e-learning and traditional education, and identifies barriers to e-learning.

This study will evaluate the challenges that health college students face in e-learning during the COVID-19 pandemic. The academic performance of students might be affected by racial, economic, and resource differences.

Purpose of the Study

To evaluate the challenges of online learning during the phase of the ongoing pandemic (COVID-19 period) from the perception of students.

Research Question

What are the online learning challenges among undergraduate students during the COVID-19 pandemic?

METHODS

Design

The primary research method for this study we used descriptive cross-sectional quantitative method.

Setting

The study was implemented in health faculties on the female campus at King Abdulaziz University. The University is affiliated with the higher ministry of education, a public university, and a non-profit agency. The research was conducted on six health faculties, each faculty consisting of two floors ground and first floor, classrooms, and laboratories. The characteristic of each college is Medicine College has 1000 female students. The nursing college has 435 female students and it has the ACEN Accreditation Commission for Education in Nursing. The dentistry college has 421 female students and it has the National Center for Academic Accreditation and Assessment (NCAAA). However, the applied medical sciences college consists of 248 female students and it has the German Accreditation Agency in Health and Social Sciences. The medical rehabilitation sciences college has 167 female students and it had APTA Commission on Accreditation in Physical Therapy Education. Finally, the college of pharmacy contains 309 female students and had the ACPE Accreditation Council for Pharmacy Education. We chose this site because the health facilities are facing the greatest challenges while clinical practicing because it's a must in health faculties and also this is the first time experiencing this kind of situation.

Sampling and Sample Size

Participants were students from nursing, pharmacy, medicine, medical rehabilitation sciences, and applied science departments at King Abdulaziz University. The sampling technique we used is a probability simple random. The Inclusion criteria are female students of health faculties at King Abdulaziz University and the exclusion criteria are other faculty students. We needed 335 students, as a sample size that enrolled for this study. It was calculated by the Raosoft website by Raosoft, Inc.

Tool

The questionnaire consisted of two parts. The first part was developed by the researchers it's the social, and demographic data of students, which is age, marital status, number of children in the house, whether they are the student's siblings or her children, college, academic year, residence, monthly allowance, the atmosphere at home like noise, number of individuals sharing the same room.

In the second part, we used the online education tool questionnaire it was developed by Shawaqfeh, et al. [8]. It consisted of 15 items that assess the challenges facing the students in online learning like lack of internet connection or lack of instructions and so on. In addition, the areas of development consisted of 3 items that asked the participants to evaluate their needs of development like computer skills. The Likert scale of the tool is each answer gives a points-based score (strongly disagree=1 point, disagree=2, neutral=3, agree=4, strongly agree=5 points).

Data Collection Process

After we took the ethical permission, the data collection was through an online questionnaire that was sent by email to the student. University Email can assist in conducting the maximum random number of health faculties students and it's also very useful in this pandemic of COVID-19 as the social distance is important and it is cost-effective and a time saver method.

Data Analysis

The Researchers used the SPSS version 23 to analyze the data and output the results are shown in Tables. The statistical test used in this study is descriptive analysis, which includes percentages, and frequencies. It is used to give an idea of the distribution of our data and helps to detect outliers and typos, thus making us ready to conduct further statistical analysis.

Descriptive statistics were computed and bivariate analyses were performed. Factors regression analyses were conducted to identify factors associated with the students' challenges with online learning. The level of statistical significance was at $p < 0.05$.

Ethical Considerations

The ethical approval for conducting the study was obtained from king Abdul-Aziz University for data collection. Then, permission was obtained from King Abdul-Aziz University's health faculties after explaining the aim of the study. All the data conducted would be kept confidential and anonymously with no name, participants were informed that the researcher group would keep the confidentiality of individual responses; they would have the right to withdraw from the study at any time. After collecting data, the questionnaires were stored, and nobody can access them except the research team. It did not affect their studies or university relationships. After explaining the study. As the consent was implied by the participants completing the survey. Regarding using the Questionnaire, we obtained permission to use the online education tool in our study by communicating with the author Mohammad S Shawaqfeh by writing to him on his e-mail. A copy of the message would be attached to the appendix field.

Reliability and Validity of Tool

Five experts in the field of the study tested the questionnaire for its content validity. A copy of the responses would be attached to the appendix field. Accordingly, the necessary modifications for more clarity were done. For example, some doctors suggested changes in the demographic data, including eliminating the repetition of the word "college" in the census and only mentioning the name of the college without referring to it as a college. Eliminate the repetition of the word "year" and only count academic years, such as the second, third, fourth ...etc. As for the second part of the questionnaire, most of the experts suggested writing the phrase "in your opinion, the following are real barriers or challenges to the e-learning process" before the start of the second part instead of repeating it at the beginning of each question. In addition, The Cronbach's alpha test has been used and the result was 85% which means that the survey tool had a good level of reliability. The reliability test is attached in the appendix field.

Pilot Study

The pilot study was carried out on 10% of the studied sample in the previously mentioned setting to test the applicability and the clarity of the included tools. The pilot also served to estimate the time needed for each subject to fill in the questionnaire. The students estimated the time it took to complete the questionnaire to be around four to five minutes. Accordingly, necessary modifications were done. For example, students had a problem distinguishing between the meanings of these two questions (Too challenging eLearning tools), and (Too challenging eLearning materials). This made us clarify the intended meaning by giving examples.

RESULTS

According to the descriptive statistical for social demographic data which depend on percentages we found that most of the participants were from nursing and medicine colleges (22.7%, 22.7%) in fourth year (43.9%) and the high percentage of the age was 19 years (48.4%) and the marital status of the students was single (96.4%) regarding the married students their percentages were (10.3%) six out of 10 have one child only, regarding the not married students the number of younger sibling who need care or noisy source at home the most frequency was for none (35%), the

residence were urban (84%), regarding if the monthly allowance is appropriate to the afford the e-learning needs for example the internet fines most of responses were to yes answer (82%), the atmosphere of the home during the lectures and study time most of the responses were to appropriate answer (47%), in number of individual sharing the same room in not an obstacle for studding question the response was (64%) for no answer (Table 1).

Table 1 The descriptive statistical for the social demographic data (n=335)

Items		Frequency	Percent
College	Nursing college	76	22.70%
	Medicine college	76	22.70%
	Pharmacy college	50	14.90%
	Dentist College	51	15.30%
	Medical Rehabilitation Sciences	41	12.20%
	Faculty of medicine sciences	41	12.20%
Academic year	Second year	69	20.60%
	Third year	65	19.40%
	Fourth year	147	43.90%
	Fifth year	29	8.60%
	Sixth year	14	4.20%
	Seventh year	11	3.30%
Age	19	162	48.40%
	20-24	155	46.30%
	25 and more	18	5.30%
Marital status	Single	323	96.40%
	Married	10	3%
	Divorced	2	0.60%
If you are married or previously had a marriage experience: Number of children	One child	6	1.80%
	Two child	2	0.60%
	More than two	2	0.60%
	There are no children	325	97%
If you are not married Number of your younger siblings who need your care or noisy source at home also distracts you from listening to lectures and doing your college assignments	One	69	21%
	Two	68	20%
	More than two	71	24%
	None	115	35%
Residence	Rural	52	16%
	Urban	283	84%
Monthly allowance is appropriate to afford the e-learning needs for example the internet fines	Yes	274	82%
	No	61	18%
Atmosphere of the home during the lectures and study time	Noisy	98	29%
	Quiet	60	18%
	Appropriate	156	47%
	Crowded	21	6%
Number of individuals sharing the same room is not an obstacle to studying	Yes	121	36%
	No	214	64%

Table 2 shows the probability values of the survey data by finding the regression as reported by the studied sample (n=335).

According to the p-values of resulted data, the significant results were in college with a p-value of 0.0145, and if the number of individuals sharing the same room is not an obstacle for studying with a p-value of 0.0001, living away from educational institutions with a p-value 0.0053. In development data the needing for computer skills literacy, the needing for skills training in using computers and the internet with a p-value of 0.0001, and the needing for training on online course delivery with a p-value of 0.0002. Academic year with p-value 0.0133, age with p-value 0.0488, and lack of motivation with p-value 0.0171.

Table 2 The probability values of the survey data by finding the regression as reported by the studied sample (n=335)

Q	p-value
College	0.0145***
Academic year	0.0133*
Age	0.0488*
Marital status	0.0001
If you are married or previously had a marriage experience: Number of children	0.327
If not married number of your younger siblings who need your care or noisy source at home also distracts you from listening to lectures and doing your college assignments	0.3906
Residence	0.2586
Monthly allowance is appropriate to afford the e-Learning needs for example the internet fines	0.4944
Monthly allowance is appropriate to afford the e-learning needs for example the internet fines	0.3709
The number of individuals sharing the same room is not an obstacle to studying	0.0001***
Limited technology experience	0.4145
Lack of experience in using online tools	0.6032
Lack of motivation	0.0171*
Too challenging e-Learning materials computer, Tablet, I pad… etc.	0.8897
Lack of instructions	0.9977
Avoiding commonly used online tools such as YouTube and Facebook by instructors	0.148
Living away from educational institutions	0.0053***
Inability to network with experts in the field	0.2023
Too challenging eLearning tools such as Zoom app, Blackboard, Teams… etc.	0.3104
Inadequate school/faculty support	0.2373
Lack of online community	0.6803
Online learning is boring	0.3239
Lack of trust in online systems	0.9183
High cost of hardware	0.3481
Time-consuming	0.4864
Is there a need for computer skills literacy	0.0001***
Is there a need for skills training in using computers and the internet	0.0001***
In your opinion is there a need for training on online course delivery.	0.0002***
p-value <0.0001; extremely significant ***; highly significant **; significant *	

Table 3 illustrates the relationship between demographic data and the challenges and by using a one-tailed paired t-test the p-value was 0.0022** which is considered highly significant, this table indicates that the challenges are affected by demographic criteria as reported from the student's point of view.

Table 3 The relationship between the social demographic data and the challenges to students' perception (n=335)

The relationship	Type of the statistical test	p-value
Relationship between the social demographic data and challenges	One-tailed paired t-test	0.0022**
p-value<0.0001; extremely significant ***; highly significant **; significant *		

Table 4 shows the relationship between the demographic and the development criteria by using a one-tailed paired t-test the p-value was 0.0359 which considering significant, this table indicates that the development is affected by the demographic criteria.

Table 4 The relationship between social demographic and the development data as students' perception (n=335)

The Relationship	Type of the statistical test	p-value
Relationship between the social demographic data and development	One-tailed paired t-test	0.0359*
p-value<0.0001; extremely significant ***; highly significant **; significant *		

DISCUSSION

The pandemic of COVID-19 started in 2019 in China more specifically in Wuhan city and spread quickly throughout the world in a few months. At the beginning of this pandemic COVID-19, many aspects of human life changed, including health, economic, social, psychological, and educational, as all countries made decisions on the continuity of education through e-learning, which led to challenges that affected the academic performance of students. One of those countries is the Kingdom of Saudi Arabia. To evaluate the challenges of online learning during the phase of the ongoing pandemic (COVID-19 period) from the perception of students. The study took a place at King Abdul-Aziz University specifically in the health faculties. The data was collected through an online questionnaire that was sent by Email to the student. University Email can assist in conducting the maximum randomly several health faculties students and it's also very useful in this pandemic of COVID-19 as social [2].

The results were showed that e-learning leads to asking for motivation at p=0.0171 which considering significant, this result compatible with Shawaqfeh, MS. study which concluded that one of the e-learning disadvantages is lack of motivation [8].

The effect of living away from educational institutions was significant where the p-value was 0.0053 and according to the resulted data, the living away from the educational institutions considering a barrier in the e-learning process and that is compatible with a study done by Unaizah College of Medicine and Medical Sciences for assessing the effect of online technology in lectures illustrations this study concludes that the medical students were well-received the online learning. On the other hand, there were some limitations in study participants such as technical issues, individual receiving of the information, the barriers of institutional methodology, and lacking non-verbal communication [6].

For the Limited technology experience, the p-value was 0.0185 which is considered significant high that indicates that the limited technology experience considers a challenge in the e-learning process which matches a study done by Krishna Regmi that found that a lack of computer skills has been identified as a major barrier preventing the students and doctors from using computer-based learning methods, rather than a lack of preference for new technologies [14].

Lack of experience in using online tools was extremely significant at p=0.0001 and that indicates a lack of experience in using online tools considering a barrier or challenges for the students which is compatible with a study done by Alfaki which concluded that e-learning among nursing students at Najran University has several limitations one of them is students at nursing college were using an e-learning environment for the first time in their academic career [15].

On other hand, The research results illustrated that the needing for computer skills literacy in e-learning and the needing for skills training in using computers and the internet and the needing for training on online course delivery were significantly high at p=(0.0001, 0.0001, 0.0002) respectively these results congruent with many studies one of

them is a study done by Adnan recommended that to ensure an effective and productive online program, students must not only know how to cope up with the fast-paced online classes but they also need to have a sound computer and technological skills to learn from online lectures [16]. On the other hand, in the study was done by Abbasi the majority of learners stated that e-learning faces many challenges that do not exist in traditional education, one of them is the technical problems, the lack of responses, and losing the skill of dealing effectively with technology [17]. Contradictory, study results disagree with Muller's agree Muller's study concluded that the dental students gave positive rated aspects of e-learning in terms of computer use [18].

The research data showed that the relationship between the socio-demographic data and the challenges was highly significant at p=0.0022. The researchers indicate that the demographic criteria affect the challenges where the type of college and the studying year and age relate to the challenges and that matched with Emmanuel's study [19].

The relationship between the socio-demographic data and challenges at p=0.0022 is highly significant, this result indicates that the developments areas are affected by demographic criteria where according to the resulted data showed the computer skills related mainly to type of college and the studying year and age and that compatible with Naresh's study [20].

CONCLUSION

Based on the findings of the research study, it is concluded that the results concluded that 45.5% of the participants are from nursing and medicine colleges and the ranged ages are 19 years old and most of them are single status and suffering from the noisy younger children at home.

Additionally, the findings mentioned that the lack of motivation and the critical challenges were the living away from the educational institutions considered barriers to the e-learning. In addition, the limited technology experience considers a challenge in the e-learning process. Moreover, a lack of previous experience in using online tools considering a barrier or challenge for the medical students.

Finally, the results illustrated that the needing for computer skills literacy in e-learning and the needing for training skills in using computers and the internet, and the needing for training on online course delivery were very important.

The relationship between the social demographic data as (college, age ...) and the challenges was considered highly significant and according to the responses the researchers indicate that the demographic criteria affect the challenges where the type of college and the studying year and age relate to the challenges as reported by students.

According to the results, most of the students believe that e-learning is considered a barrier because of the distance and the high percent suffering from the noise at home which disrupts their concentration.

Limitation

There was a limitation in this study such as the COVID-19 pandemic prevents us to make face to face questionnaires to reach a larger number of students additionally, due to a lack of sufficient period we could not make surveys to a various specialists in different colleges and different gender, not all the received students to our questionnaire survey respond.

Recommendations for future research studies are

- Study on the effect of e-learning on the practical performance of medical students.
- Study on the effect of the economic situation on the e-learning academic performance.
- Study on the relationship between e-learning and outcome grades in the nursing major.
- Study on the effect of e-learning on the social behavior of medical students.
- Study on the extent of satisfaction in medical students with e-learning.
- The researchers recommended that the university can make educational videos on how to use the educational electronic services that the university provides to the students.
- Since health colleges contain practical classes, online classes should be similar as possible to what is the case in traditional learning.
- Try making the online class more fun and motivating the students and make them feel it is no different from traditional learning.

DECLARATIONS

Conflict of Interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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