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FULL PAPER**An investigation of Students' Perceptions and Challenges of Online Education During the Covid-19 Pandemic: A case Study of Undergraduate Students at Medicine Faculty, University of Khartoum***Prepared by***Dr. Asma Ali Nasr***Department of English
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Ghada.mhassan@uofk.edu***Abstract:****Background**

The World Health Organization (WHO), on 11th March 2020, declared the corona virus (COVID-19) outbreak a global pandemic and announced some precautionary instructions to limit the spread of the virus around the world. These instructions include social distancing, isolation and quarantine, community containment, national lockdown, and travel restrictions. The lockdown that resulted from the COVID-19 pandemic affected the educational systems worldwide. Like other countries, the Sudanese government directed the academic institutions to transfer to online education instead of face-to-face learning.

Objective

The aim of the study is to investigate learners' perceptions and challenges of online during the COVID-19 pandemic at the faculty of medicine, University of Khartoum.

Methodology

An online questionnaire via Google Form used to collect data, then the data analysed using descriptive statistics.

Results

The results showed that (60.5%) of the participants did not enjoy the online education. Students indicated that online education could have problems such as limited internet quota (57%) and technical issues (85%). The majority of the respondents (70%) noted that online education resulted in a lack of motivation and self-regulation (85%). In addition, online learning did not upgrade students' discipline knowledge (55%) clinical skills (72%) and social competence (57.5%). Furthermore, most of the participants (72.5%) prefer face-to-face classrooms to online education. Although further studies are required to gain more understanding of the application of online learning at other medical colleges in Sudan during the COVID-19 pandemic, the findings have important implications for developing online learning in Sudan.

Keywords: Challenges, COVID-19, Khartoum University, Medical Students, Online education, Perceptions.

Introduction

Recently, researchers have shown an increased interest in online learning

Online learning or distance learning is the learning that allows learners to study at their own homes or pace rather than attending a school or university. Bates (2005) and Fry (2001) also state that Online education is done by using the internet and technology to develop learning materials. Basilica and Kvavadze (2020) report that online education is the state of applying the internet and software to teach knowledge through video, audio, and band images.

Several attempts have been made to research the online learning during the COVID-19 pandemic. Basilaia and Kvavadze (2020) claim that COVID-19 has badly affected the educational system in the world as there is an untouchable collapse in institutions of education, in addition to its clear economic impacts in the long and short term.

Likewise, Dewis's research (2020) indicates that online education during COVID-19 in primary schools is quite well due to the cooperation between teachers, students, and their parents. On the other hand, Purwanto et al. (2020) studies in elementary schools found that teachers, students, and parents faced some difficulties during online education. These include limited communication among students, challenges concerned with students with special education needs in addition to parents' challenges such as lack of self-discipline, too much time spent to help students, especially those under grade 4, the deficiency of technical skills, and the high cost of internet bills. Zhang et al. (2020) who studied online education among schools and university students in China during COVID-19, found some problems like the content of the materials, the way of teaching, the teachers' load and the teaching environments and its effect on the learning process. Hermanto and Srimulyani (2022) investigated the challenges of online education in Indonesian schools and universities, found some obstacles to online education such as limited internet access, students' lack of self-control, and limited social interaction. Similarly, Adnan and Anwar (2020) investigated the views of university students in Pakistan about online education during the time of COVID-19 pandemic. The findings showed that online education is not popular in Pakistan as most students cannot access the internet because of technical issues. In addition to other problems such as the lack of face-to-face interaction with both teacher and students. They added that the absence of the traditional classroom resulted in poor social interaction during the learning process. Several researchers have reported that students are not pleased with online education and prefer the traditional learning classroom to online education (Evisen et al 2020; Patricia and Hermida 2020; Mahyoob 2020). However, other students show positive attitudes toward online education, although there are some obstacles to online education, and believe that it could lead to better student participation (Kamal et al 2020).

Like many countries, Sudan was affected by COVID-19. The first case was announced in March 2020, and then the authorities announced the disease spread throughout the country. Therefore, the Federal and Khartoum State Ministries of Health issued some precautionary instructions including social distancing, isolation and quarantine, national lockdown, and travel restrictions. Due to the emergence of the spread of COVID-19 in the country, the public ministry of education and higher

ministry of education closed all the schools and higher educational institutions in the country and directed the institutions to shift to online education instead of face-to-face classes.

The application of online education in Sudan is still under the stage of construction. Few universities offered online learning before the COVID-19 pandemic period like Sudan Open University which was founded in 2002, and Sudan University of Science and Technology which offers online learning for postgraduate students.

In Sudan, it is the first time to apply online education at the university undergraduate level for all disciplines. Some research has investigated online learning during the COVID-19 in Sudan, but these studies have not dealt with online learning in medical fields. Thus, few studies have investigated the students' recognition of the shift to online education and the challenges that learners faced during the COVID-19 pandemic, especially in the medical field. The present study contributes to this growing area of research by exploring the students' perceptions of their online learning experience during Covid-19 to evaluate and assess the shift to online education in the medical field in Sudan. In addition, the research highlights some obstacles that face the application of online learning in Sudan.

Questions of the study

This research addresses the following questions:

- 1 What are the students' perceptions of online learning?
- 2- what are the challenges that the students had during COVID-19 online learning experience?
- 3-Do students prefer online learning or face-to-face classrooms?

Methods

The aim of the present study is to find out the challenges that faced students at the faculty of medicine, university of Khartoum (2020) and their perceptions of online education during Covid-19. Data collected by distributing a self-developed structured questionnaire via google form. The content of the questionnaire developed by the researchers based on the aim of the research. The content and accuracy of the questionnaire reviewed by experts, and then piloted on some medical students and then modified according to the suggestions.

The questionnaire is built up of four sections. The first part covers some basic demographic, IT skills and experience of online learning. The second part describes learners' perceptions about the advantages and disadvantages of online learning. The third part investigates learners' views of online learning based on their experience. The last part investigates the participants' views about their experience of online learning during the COVID-19 Pandemic.

participants

The study conducted at the level of undergraduate students at the Faculty of Medicine, University of Khartoum, Sudan. It carried out after completing online education classes in the first semester September 2020. The sample consists of 43 students, 25 male and 18 female students from the

second and third years. The participants were informed about the aims of the research and they voluntarily participated.

Results

The data was categorized and analysed using the descriptive statistics method.

Table (1) shows the participants' demographical information.

Variables		
Age group	18-21	
Years of study	2 nd and 3 rd	
Gender	Male 25	58%
	Female 18	42%

Table 2 shows learners' experience in online education and their IT Skills.

Variables			
Previous experience in online learning	Yes	No	
	25%	75%	
IT Skills	High	Moderate	Low
	20%	62.5%	17.5%

As indicates in table 2 most of the participants (80%) had between low and moderate IT skills. Whereas, (20%) of the students have high skills. However, a considerable amount of them (75%) did not participate in online education before the pandemic and 25% of the participants had experience in online education before the COVID-19 pandemic.

The data obtained about learners' perceptions of online learning (table 3) shows a significant positive correlation between access to learning materials and study independently. Most of the respondents (90.5%) report that it was easy to access online and (90%) found that online education helped learners study at their own pace. In contrast, (7.5%) of the participants have negative views. While 2.5% of the participants had neutral views.

More than two-thirds of the participants (62.5%) had comfortable surroundings during online learning compare to 12.5% of the respondents who disagreed and 5% strongly disagreed. In contrast,

20% of the respondents were undecided whether they had comfortable surroundings during online education.

More than half of the participants (52.5 %) believed that they did not participate effectively during online education compare to 27.5% who reported that they were actively engaged in the learning 4% strongly agree that they can join and participate effectively and 15% of the participants did not decide.

Greater number of those who responded to the role of the teacher in online learning (77.5%) reported that online education minimizes teacher and peer interaction. Whereas, (17.5%) believed that online education could maximize teacher and peer interaction and small portions (5%) did not decide.

Most participants (85%) reported that online education could have technical issues compare to 15% who disagreed. A significant number of the students (82.5 %) agreed that online education could result in a lack of self-regulation and correction in contrast (17.5%) disagreed.

A large number of the participants (79.4%) agreed that they had inappropriate learning conditions at home. Conversely, (18.1%) felt they had and (2%) were undetermined.

Table 3 Learners' perceptions about the advantages and disadvantages of online learning

	Strongly agree	agree	disagree	Strongly disagree	Undecided
It is easy to access to online materials during online learning	32.5%	60%	7.5%	-	2.5%
Online learning helps learners to study on their own pace.					
Learners have comfortable surrounding during online learning	60%	30%	7.5%	-	2.5%0%
During online learners can join the classroom and participate effectively,	45%	17.5%	12.5%	5%	20%
Online learning reduces teachers and peers' interaction.					
Online learning could have some technical problems.	27.5%	4%	36%	17.5%	15%
Online learning could result of lack of self-discipline.	40%	37.5%	12.5%	2%	5%
During online learning learners could have inappropriate learning condition at home,	45%	40%	12.5%	2,5%	-

	40%	42.5%	10%	7.5%	-
	18%	61.5%	15.4%	3.1%	2%

The overall results indicate that the participants respond differently to their experience of online learning regarding increasing discipline knowledge, social competence and clinical skills as indicates in table 4. More than half of the respondents (55%) reported that online education did not upgrade discipline knowledge. On the other hand, (22.5%) of the participants believed that online learning improved their discipline knowledge, and (10%) strongly acknowledged online education for improving discipline knowledge. While 12.5% is uncertain. Moreover, (72.5%) of the respondents believed that online education did not improve their clinical skills. Whilst (15%) believed that online education improved their clinical skills, (12.5%) undecided. More than half of the participants (57.5%) said online education did not increase social competence. Compare to 27.5% who felt that online education increased their social competence and 15% of them indecisive.

Regarding learners' roles during the online experience, more than half of the students (57.5%) describe themselves as inactive on online education compared to (35%) who were active on online education. A few participants (7.5%) could not decide whether they were completely inactive.

Half of the participants (50%) reported they had problems like the limited internet quota on online education and lack of motivation (70%). Whereas, many students (45%) and (25%) did not face the problem of limited internet quota and are not demotivated respectively.

Table 4 Learners' views of online learning based on their experience

	Strongly agree	Agree	disagree	Strongly disagree	Undecided
Online learning increased my discipline knowledge.	10%	22.5%	47.5%	7,5%	12.5%
Online learning increased my clinical skills.					
Online learning increased my social competence.	2.5%	12.5%	50%	22.5%	12.5%
During online learning I was completely inactive.	5%	22.5	45%	12.5%	15%
During online learning I had limited internet quota problem.	20%	37.5%	25%	10%	7.5%
Online learning decreased my motivation.					
During online learning I had the problem of					

incomplete recourses / materials.	7.5%	42.5%	37.5%	7.%	5.5%
	27.5%	42,5%	15%	10%	5%
	5%	25%	50%	10%	10%

In response to the question of whether they enjoyed their online learning experience and whether they prefer it to face to face learning, more than half of the participants (60.5%) did not extremely enjoy their online learning experience. In contrast, (27.5%) who enjoyed online learning and 15% undecided as table 5 shows. A considerable number of the participants (72.5%) believe that traditional face-to-face learning is more effective than online education. Compare (17.5%) argued that online education is more effective than face-to-face learning, and a few participants (10%) undecided.

Table 5 Learners' appreciation of online learning

	Strongly agree	Agree	Disagree	strongly disagree	Undecided
Online learning was extremely enjoyable	10%	17,5%	37,5%	20%	15%
The traditional face to face to face learning is more effective than online learning.	45%	27.5%	10%	7.5%	10%.

Discussion

The shift to online education due to COVID-19 has many obstacles for educational institutions. The study shows some issues influencing students' experience and acceptance of online education during COVID19.

Regarding the students' views about the strengths of the online education experience, most of students find that it is easy to access online materials and study at one's pace in comfortable environments. This finding is similar to Simamora's (2020) and Dhawan's (2020) findings which reported that students can access online materials from any place at any time without difficulties. On the other hand, students report that online education has some weaknesses, as the students encountered some obstacles, such as student discipline, lack of social interaction, internet connection issues and insufficient learning materials. The results are in agreement with the previous studies

(Hermanto&Srimulyani 2021; Adnan Anwar 2020; Mahyoob 2020 ;Prayudha 2021 Purwanto et al. 2021), which reported that application of online education has some weaknesses including lack of motivation, lack of peer and teacher interaction, technical issues like limited internet quota , lack of self-regulation and correction, lack of technical skills, the cost of internet and insufficient learning resources.

The investigation of challenges of online education experience revealed that online education did not improve students' discipline knowledge, clinical skills, or social competence. Similarly, Adedoyin and Emrah Soykan (2020) found that online education could affect students' academic performance.

Regarding the acceptance of online education, most students did not enjoy their experience of online education as a new experience compare to more enjoyable face-to-face learning. This is similar to previous study by Evisen et al (2020), Patricia and Hermida (2020), Mahyoob (2020) who noted that students prefer face-to-face education to online education. Likewise, Adnan and Anwar (2020) investigated the views of university students in Pakistan about online education during the time of COVID-19 pandemic found that online learning was unpopular among Pakistani students due to technical problems and lack of communication which resulted in poor social interaction.

Conclusion

This study investigates medical students' perceptions of online education and challenges encountered during the Covid-19 pandemic. The study shows that the students have negative perspectives towards online learning. Most of them faced some difficulties in accessing online course materials, in addition to the technical problems and the limited internet quota. Regarding social interaction, the study shows that the students experience some issues such as lack of teacher-student interaction and peer interaction, which negatively affects students' motivation. The study also shows that online learning does not improve students' discipline knowledge or clinical skills. The current research shows favourable perceptions of traditional face-to-face education among Sudanese medical college students. Significant number of the students (72.5%) found that face-to-face learning is more effective than online learning. Whereas, (17.5%) of the students noted that online education is more effective. Further studies are required to understand students' perceptions and challenges of online education during the COVID-19 pandemic at other medical colleges.

Limitations of the study

This study conducted at university of Khartoum. The data and results are limited to small size from students at Medicine Faculty. Therefore, this results could not be generalized as the sample could not represent all the medical students. However, the results can be used for recommendations for further studies in the future. It is recommended that further researches could be conducted to find out the difficulties of online learning application at the faculties of medicine in Sudan and how to overcome these challenges.

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