Perception of Medical Students toward Online Lectures during COVID-19 Outbreak in a Nigerian University

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Abstract

Background: Closure of educational institutions during the current COVID-19 pandemic has necessitated online teaching to ensure the continuation of academic activities. The efficiency and productivity of online lecture models can be improved by incorporating the experiences and suggestions of participating students in subsequent models. In this study, we evaluated the perception of medical students in a Nigerian university toward online lectures during the COVID-19 outbreak. **Methods:** The study involved clinical students of the Babcock University, Ilisan, Ogun State, Nigeria, who were receiving online lectures during the COVID-19 outbreak. Their perception of online lectures was documented using a structured online questionnaire. The data were analyzed using the Statistical Package for the Social Sciences version 22.0. **Results:** Of the 172 respondents who participated in the study, 121 (70.3%) were female and 51 (29.7%) male. Nearly two-thirds of the students felt that having online lectures was an excellent alternative to routine classroom lectures. About 70% preferred recorded online lecture format to live online classes or online reading material alone. An overwhelming majority (89.5%) preferred video demonstrations along with reading material to other alternatives. **Conclusion:** Online lectures, if carefully planned, can be an excellent alternative to the routine class lectures, especially during this COVID-19 outbreak.

Keywords: COVID-19, medical students, online lectures, perception

INTRODUCTION

Following the spread of the novel COVID-19 disease across the globe, many countries effected the closure of educational institutions in a bid to protect students and staff from the spread of the disease. As of February 2020, only schools in China and a few other affected countries were closed due to the spread of the disease. However, by mid-March, nearly 75 countries, including Nigeria, announced the closure of educational institutions.[1,2]

As the schools and colleges were shut down for an indefinite period, there became a need to continue academic activities in universities to complete the prescribed syllabi within the stipulated timeframe in line with the academic calendar, conduct exams and graduate students. Online lectures appear to proffer a solution to this challenge. Hence, most of the academic institutions are shifting to online lectures in order to achieve these goals. This has prompted the use of online digital educational platforms such as Zoom, Edmodo, and Google Classroom to conduct lectures and examinations for students.

Due to the abrupt nature of the shift, there is a possibility that many institutions may not be adequately prepared to meet up with the challenge of switching to online lectures. Designing an effective online teaching model requires input and feedbacks from students who are the end-users. In this context, the experience of students may be incorporated while designing online lecture models to make online learning easy, efficient, and productive for them. Furthermore, life after the COVID-19 pandemic may not likely be the same and online learning may have to be integrated into the training of students.

The aim of this study was to evaluate the perception of medical students receiving online lectures with a view to identifying the

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strength and weakness of this innovation in our environment. This will help in designing and improving online lecture models for the students.

METHODS

The study was conducted among undergraduate clinical students of Babcock University, Ogun State, Nigeria, using a structured online questionnaire that was administered through the Google Docs platform. Information obtained included demographic data such as age, sex, and place of residence as well as other relevant information such as year of study, source of internet, quality of internet service, the preferred method of online lectures, perceived benefits, and problems of online lectures.

The questionnaire was designed on Microsoft Word version 2010 (Microsoft Seattle, WA, USA) and transcribed to Google Form, after which it was pretested. The questions were based on a five-point Likert scale (Strongly agree, agree, neither agree nor disagree, disagree, and strongly disagree). The forms were circulated to the predetermined group of students through online chat rooms and were kept open for a period of 1 week. Daily reminders were sent to the students during the period. Informed consent was obtained from each of the study participants through an online consent form which was made a prerequisite for filling the questionnaire.

A total of 215 medical students were included in the survey, but only 172 of them responded by filling the form. Filled questionnaires were submitted online through the Google Docs platform. The data were retrieved online and analyzed using the Statistical Package for the Social Sciences (SPSS) version 22.0 (SPSS Inc. Chicago, IL, USA). Means and standard deviations were computed for continuous variables, while discrete variables were recorded in percentages.

RESULTS

Out of the 215 clinical students who were eligible for the study, 172 students responded, giving a response rate of 80%. Table 1 shows the demographic characteristics of the respondents. Majority (70.3%) were female and most (64.5%) of them were aged between 21 and 25 years. Less than one-tenth of them resided in rural areas.

The majority (110; 64%) of the respondents preferred smartphones as the device for online lectures, while 38 (22.1%) preferred laptops, 19 (11.0%) preferred tablets, and 5 (2.9%) preferred desktop. Mobile data was the preferred source of internet service in 128 (74.4%) of respondents, while 44 (25.6%) of them subscribed to internet service via Wi-Fi. Only 21 (12.2%) students had excellent internet network, 117 (68.0%) had good internet service, while 34 (19.8%) had poor internet network. The preferred online platform was Zoom (93.0%) and Edmodo (7.0%). Majority (70.3%) preferred live online classes with simultaneous recording. Other preferred formats were live online classes (11.6%), recorded online

Table 1: Demographic characteristics of the respondents

Characteristics of respondents	Frequency (%)
Sex	
Male	51 (29.7)
Female	121 (70.3)
Age range (years)	
≤20	57 (33.1)
2-25	111 (64.5)
26-30	4 (2.3)
Residential area	
Rural	14 (8.1)
Urban	158 (91.9)
Current level of study	
400	63 (36.6)
500	65 (37.8)
600	44 (25.6)

classes that can be uploaded (14.0%), and online reading material alone (4.1%). An overwhelming majority (154; 89.5%) preferred video demonstration together with reading materials as the choice of lecture material, 16 (9.3%) preferred reading materials only, while 2 (1.2%) preferred video content only.

Figure 1 shows the perceived benefits of online lectures. More than half (93; 54.1%) of the respondents agreed that online lecture is convenient, while 72 (41.9%) agreed that online lectures improved self-discipline and responsibility.

Figure 2 shows the challenges noted by online lectures. The most commonly identified problem of online lectures was distraction from the immediate environment (69.8%).

Majority (138; 80.2%) of the students had adequate interaction with their lecturers, while 34 (19.8%) had suboptimal interaction with their lecturers. Nearly half (45.3%) of the students will not recommend online lectures after the COVID-19 pandemic, while 50 (29.1%) will do so; however, 44 (25.6%) were indifferent about the continuation of online lectures after the pandemic.

One hundred and five (61.0%) of the students agreed that the online lecture was an excellent alternative to the routine class lectures, while 35 (20.3%) felt otherwise; the remaining students were indifferent. About three-quarters (129; 75.0%) of the class would not like to have their written exams online, while 21 (12.2%) would prefer to have their written exams online; the remaining 22 (12.8%) were indifferent about having their written exams online.

DISCUSSION

Current global realities make it imperative to design novel ways of doing things. Online lectures became imperative due to the lockdown necessitated by the COVID-19 pandemic. The adoption of online teaching is gradually becoming the new normal teaching modality across the globe.

Our study showed that the majority of the students reside in urban areas, which are expected to have good internet coverage.
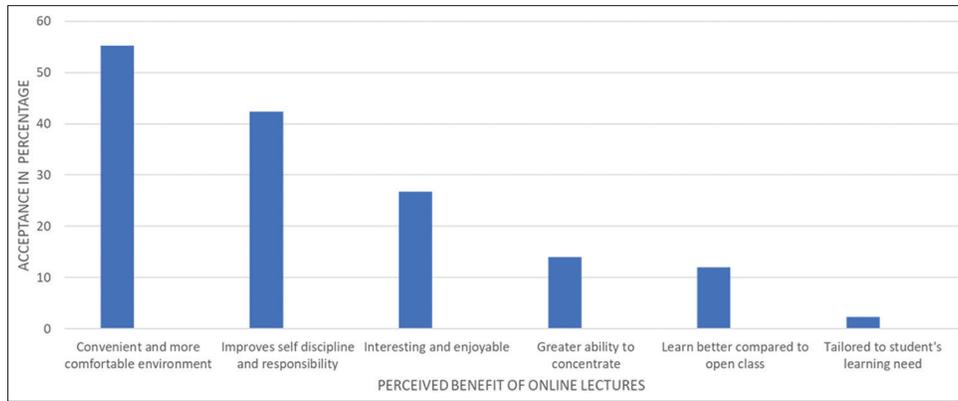
Figure 1: Benefits of online lectures
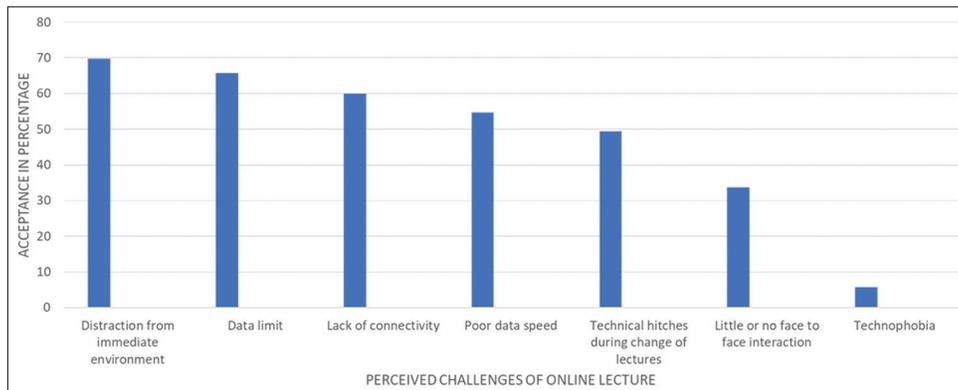
Figure 2: Perceived challenges of online lectures

Kuboye previously reported that the quality of data download per click in Nigeria is relative to location, being generally higher in urban areas compared to rural areas.[3] It was therefore not surprising that most of the students had fairly good internet service since they mostly reside in urban areas. However, about one-fifth of the students had poor internet service. This group of students did not feel that online lecture was an excellent alternative during this period of lockdown. It is likely that such students did not benefit much from online lectures due to poor internet facilities. This is similar to the findings of Muthuprasad *et al.* who reported that lack of Internet access will likely exclude some of the learners from online classes.[1]

Most of the respondents preferred smartphones for their lectures. Smartphones are relatively affordable, portable, and easy to operate. Furthermore, most online lecture applications are smartphone compliant and information can be assessed readily with these phones. Poole had earlier documented that students often accessed learning resources from their home computers;[4] however, with the introduction of smartphones, there is a clear shift from computers to smartphones. Mobile data appears to be the main source of internet connection in our environment, the advantage being that it is portable and the network is usually available once within the network coverage. However, the data access and experience will depend on several factors such as the extent of the network coverage, network congestion, and the speed and amount of mobile data available

on the plan subscribed for. Although Wi-Fi is cheaper, more reliable, and faster, it is not readily available outside academic areas, so most students will still resort to mobile data even though it is more expensive.

Many different online applications have been developed to enhance virtual interaction and communications. Among these are Google Classroom, Edmodo, and Zoom. These applications became even more useful on a larger scale during this lockdown period, with several conferences and seminars being organized through these platforms. Most of the students in the present study preferred zoom to other applications. The free version of zoom allows for about 40 min of visual and audio interaction and accommodates up to 200 participants. On the other hand, the premium version, which requires a subscription, offers unlimited time and an unlimited number of participants. The premium version of Zoom, or other alternatives, will be more beneficial for lectures lasting up to an hour and for large classes.

The format of presenting online lectures is of important consideration in online teaching. Most of the students in the present study preferred live classes that can be recorded. This offers them the opportunity to revise the lectures later at a convenient time after participating in the live classes.[1] An overwhelming majority of the students preferred a combination of video and reading materials as the nature of course material. This further highlights the importance of visual aids in teaching

as reported in previous review articles.[5-7] Lecturers should always endeavor to include visual aids during their lectures in order to enhance the effectiveness of online lectures.

More than half of the students in the present study agreed that receiving online lectures is convenient, as they could be taught within the comfort of their homes. This strongly favors online lectures, since it is believed that learning is best in a conducive environment where students are relaxed. This is advantageous most especially during the current COVID-19 pandemic, as staying at home offers remarkable protection against the disease. However, teachers/consultants may be able to use online platforms to organize additional tutorials for their students even after the pandemic. This will invariably increase the contact time the students have with the consultants.

Most of the student's perceived challenges were related to the internet connection. These challenges included data limit, data speed and problems with connectivity. This is in line with the findings of Lin and Hsieh and Peng *et al*.;[8,9] they observed that problem with the internet is a major hindrance to an effective online lecture. Bearing in mind that most of the students preferred video content and reading material as course materials, live streaming of these video contents will require lots of data and good internet service. The financial implications of this may be heavy on students and their families and may make it impossible for some students to participate fully in online classes. Internet data are still expensive and slow in Nigeria and the major source of data is still mobile data.[10] Online teaching can be most efficient and successful only if internet facilities are provided to all by making it equitable and affordable.[1] Technical hitches during a change of lecturers were also identified by the students as a problem of online lectures. This is also in line with previous reports.[1]

One of the factors that determines the success of online classes is the structure of the classes. It is advisable to avoid long classes and also ensure there is an adequate break in between consecutive classes.[11-13] This will not only avoid cognitive load, but also take care of the physical strain caused by prolonged use of electronic gadgets.[13]

About 70% of the students highlighted distraction from their immediate environment as a major problem of online classes. These distractions can be minimized with self-discipline and a good sense of responsibility. However, only about 41% of the students appreciated that online lectures may indirectly improve their self-discipline and responsibility. As the online lectures progress, it is hoped that more students will improve in self-discipline and responsibility.

A large proportion of the students had adequate interaction with the lecturers during this period, despite the perceived challenges. This observation is commendable and reassuring. Nearly half of the students would not recommend continuation of online lectures post-COVID-19 pandemic although the majority of them felt that online lecture was an excellent alternative to their routine classroom lectures during the period of lockdown.

This is likely related to the challenges experienced with the on-going lectures. However, incorporating a few online classes as additional teaching sessions to physical classroom teaching after the lockdown will not be as burdensome as the current full online teaching. Most students would rather not have their exams conducted online probably because of the problems with internet service.

Conclusion

The study showed that online lectures offer a good alternative to the routine classroom lectures for medical students, especially during this period of lockdown. However, inadequate availability of good internet service is still a strong limitation toward harnessing these benefits. Furthermore, visual aids in the form of video demonstrations may help enhance the effectiveness of online lectures.

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Conflicts of interest
There are no conflicts of interest.

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