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Opportunities and Challenges of Online Teaching and Learning during COVID-19 Lockdown from Faculty's and Students' Perspective at Women Medical & Dental College Abbottabad

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Abstract

The Coronavirus (COVID-19) pandemic originated in Wuhan, China, and it rapidly spread across the globe halting all activities and confining everyone indoors. Almost all matters were limited to computer screens and the internet, including education. All the schools, colleges and universities resorted to online learning and teaching. This transition from traditional to online learning has occurred in almost all the educational institutions in Pakistan. E-learning brought many opportunities like safety from contracting COVID-19, time conservation and comfort of home. Challenges such as poor internet connection, inadequate experience with online study platforms and lack of motivation for students and teachers also came forward. The study concluded that 88.5% of students and 60% of faculty members preferred physical classes because of lack of focus and internet connectivity issues. 40% of the faculty faced internet connectivity issues, and 28% faced lack of participation as the main challenge. 74% of faculty members were familiar with MS Teams, while 26% were not. 65% of students did not find their level of assessment to be the same as it was in physical classes. Secondly, the opportunity for faculty was that 60% of the teachers found online teaching helpful in their financial stability during COVID-19. For students, the opportunity to continue their education despite the pandemic was the biggest advantage.

Keywords COVID-19, online classes, online teaching, challenges, opportunities, e-learning

1. Introduction

The Coronavirus (COVID-19) pandemic began in Wuhan city, China, in November 2019 and spread to more than 200 countries like wildfire. The economy and social life all around the globe have been thrown into disarray, with more than three billion people under a complete or partial lockdown (1, 2). It has taken a toll on every aspect of human life. For the past one and a half years, the matters of the world have been limited merely to a computer screen. Schools, universities and other educational institutes have also been confined to digital platforms. Education has evolved beyond the four walls of a classroom. Covid-19 obligated academic experts to reconsider the traditional face-to-face learning, and thus distance learning was the only feasible option to fill the classroom void (3). Today, almost every student and faculty member is familiar with the two words "online classes". With the ongoing spread of coronavirus, physical learning has come to a complete stop. Almost all educational institutions resorted to online

education to facilitate the students and minimize the time lost (1). This new learning method has brought many challenges and opportunities for the teachers and those being taught. While many developed countries have well-established online and distant-learning programs, this is not the case with most medical colleges in developing countries, including Pakistan (1). The challenges of implementing e-learning in developing countries are different from the developed world (4). Although e-learning has facilitated students in many ways, it has adversely affected their learning capacity and capability. Students benefit but also lag in this form of education because of the sudden transition from physical to online learning.

The dependency on online platforms is a big challenge for students and instructors. Some are not very familiar with the ways of online technology, or some have poor connectivity, are very inclined to be denied access to the online class and can limit the teacher's potential to engage with the students or delivery of content in online learning (5). Some students

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and faculty members who live in remote areas or places with bad connections are likely to not cope with the rest of their fellows and the curriculum. Since most medical institutes in Pakistan follow the conventional way of teaching, lack of physical contact and communication has affected the quality of lecture deliverance to the students (5).

This lack of contact has also greatly affected their understanding of all clinical subjects for the students. The bond between the students and teachers that is formed in a physical learning space is absent in this setting of education, and this leads to a communication gap which is also a big hindrance for students in grasping the complete knowledge that is being delivered. Due to that, some find computer-based learning less convenient than the traditional method. There is a lack of motivation because for students, now their relaxing space, i.e., their home/bedroom, is where they have to work. Some students may not have the privacy to focus on their class in a joint family system. Additionally, monotonous classes for hours and hours consecutively can also be very burdening and draining. Connectivity issues during online exams can adversely affect their performance which then also takes an emotional toll on the student (6).

Faculty members have also been facing various issues with this new teaching method. Most Pakistani medical colleges follow the traditional lecture method. Therefore, most medical faculty had no experience in virtual teaching but were also left with no choice but to adapt to the online delivery of educational content (1). It is incredibly challenging for such faculty members who have no prior experience with a lack of training and IT support to make online medical education effective. Lack of proper training has become an important obstacle in implementing online learning programs. This setting has also made it difficult to truly assess a student's performance since cheating on tests behind a computer screen is so easy in online tests (1).

Although all the struggles e-learning brings, the biggest advantage is safety during this surge of the deadly COVID-19 due to less exposure and maintenance of social distancing. It has also saved a lot of time from being wasted in this challenging period (7). Online learning has proven beneficial because of the easy access to and availability of recorded lectures and uploaded academic material. The student can revise at will by using these things without missing anything previously taught in the class. Even though it requires just as much mental energy, it is time-efficient and less physically exhausting. Online education also provides access to a greater depth of resources of information. If the faculty is familiar with technology, it is a very convenient and efficient way of sharing data with their

students. It also develops digital literacy skills increasingly required in the modern world. Teaching and learning can take place from any location and include teachers and students from any geographical area without requiring them to move to a certain place. Even though e-learning for both students and teachers in Pakistan has been very troublesome, there are also some opportunities it has provided for both. Engagement, feedback and cooperation can pave the way for better management of online education. Thus, this study intended to observe the opportunities and challenges faced by teachers and students in adapting to online education during the COVID-19 pandemic.

2. Methodology

A qualitative cross-sectional design was used in this study, which was conducted over five months, from April to September 2021. MBBS and BDS students ranging from 19 to 26 years, as well as faculty members of Women Medical and Dental College, were the participants in this study. Two questionnaires collected data with 20 questions each to obtain information about the opportunities and challenges of online education during the COVID-19 outbreak. It included both open and close-ended questions. Questionnaires were given to students and teachers physically. Informed consent was taken from the participants. The data was collected from 213 students and faculty members of WM & DC who were selected by simple random sampling. Data was entered and analyzed in MS word 2016. The personal information of the study population was kept secret, and confidentiality was maintained. It was used solely for research.

3. Results

The survey was conducted at Women Medical and Dental College Abbottabad to assess the opportunities and challenges of online teaching and learning during the COVID-19 lockdown from the faculties and student's perspective. A total number of subjects in the randomly selected sample was 213, out of which 140 were students (20 from each year of MBBS and ten from each year of BDS), and 73 were faculty members. One hundred forty students and 73 faculty members responded to the questionnaire. The first result showed that most students preferred physical over online classes. Secondly, a large fraction of the students used smartphones, while teachers preferred laptops for online classes. Another outcome of this study revealed that internet/device issues were the major obstacle for students, while for teachers; it was a lack of student's participation. A bulk of students did not find any change in their assessment

during online classes, and according to them, the biggest advantage was a comfortable home environment. Slides were found to be the most engaging activity in e-learning. A large part of the students was satisfied with MS Teams and the effectiveness of online learning. The college was quite helpful in offering resources for online teaching, which also

Table 1: Preference of students between online and physical classes.

Preference	Frequency	Percentage
Online classes	16	11.5%
Physical classes	124	88.5%

The study also showed that for online learning, 55% of the students used smartphones, 41% laptops, 3% tablets and 0.7% desktops. This shows that smartphones and laptops were the most frequently used devices for e-learning. Similarly, for faculty members, 64% used laptops, 31%

Table 2: Device used for online learning by students.

Name of device	Frequency	Percentage
Laptop	57	41%
Smartphone	77	55%
Tablet	5	3%
Desktop	1	0.7%

Table 3: Device used for online teaching by faculty members.

Device	Frequency	Percentage
Laptop	46	64%
Smartphone	22	31%
Desktop	2	3%
Tablet	2	3%

E-learning being very favorable has its drawbacks. The students faced many issues which led them to miss their classes, connectivity/device issues being the major obstacle,

facilitated the faculty in managing their time well. Results from the survey conducted among 140 students revealed that 88.5% preferred physical classes, whereas 11.5% preferred the online method. Thus, most of the students preferred physical over online classes, as shown in table 1.

smartphones, and 3% desktops and tablets. Laptops are the most routinely used as they are more convenient due to easy access and sharing of material, less distracting and more practical, as shown in tables 2 and 3, respectively.

i.e. 68%, 23% electricity failure and 9% being occupied by chores, as shown in figure 1.

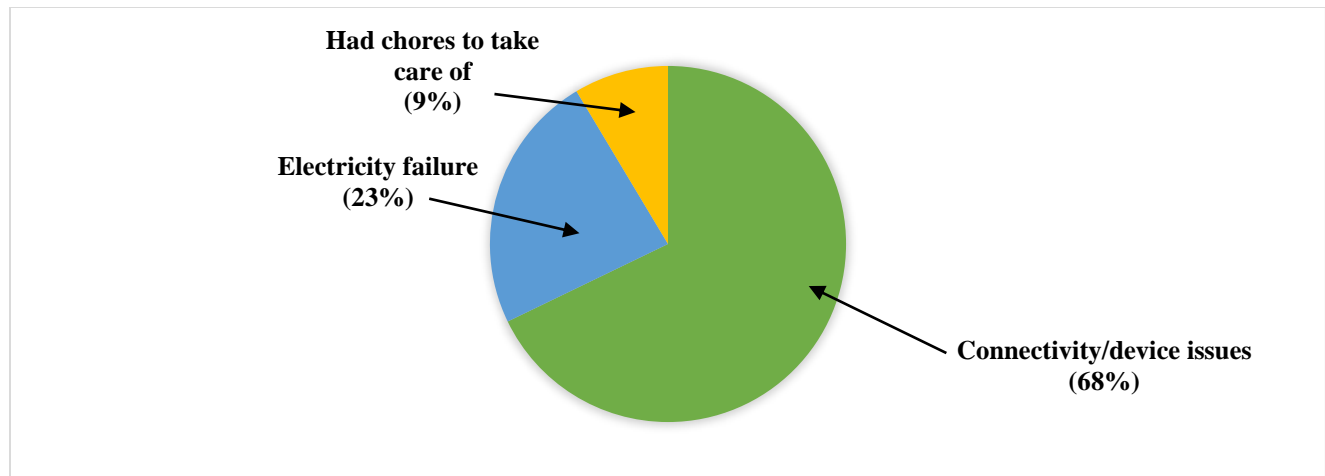


Figure 1: Reasons for students to miss their online classes.

In addition, the issue faced by 28% of the faculty members in online teaching was a lack of participation from the students; 23% believed that from behind the screen, the focus of students was not seeable. 8% had internet

connectivity, device incompatibility, and 2% had a lack of understanding of software and inability to deliver the lectures effectively, as depicted in figure 2.

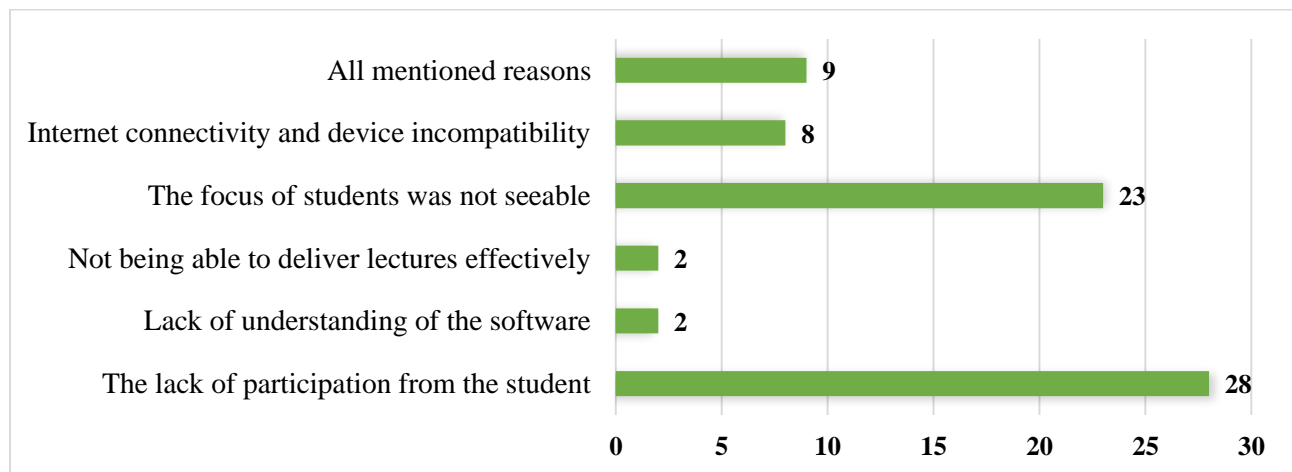


Figure 2: Issues faced the most by faculty members during online teaching.

As assessments are a big part of evaluating the students, it was seen that the student's performance was affected by a virtual learning method. 65% had no change in their level of

assessment, and 36.4% found it different from that in physical classes, as given in figure 3.

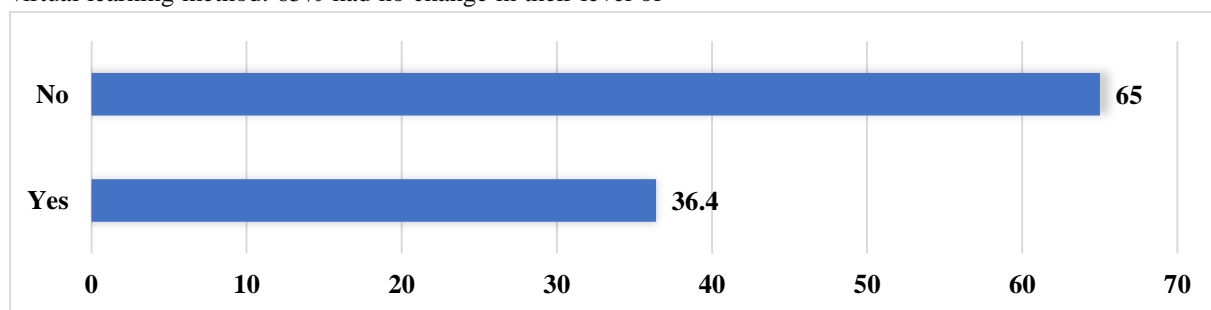


Figure 3: Level of student assessment in online versus physical classes.

E-learning during COVID-19 had its pros. Many advantages of online learning were seen, the biggest being a comfortable home environment which accounted for 41%, no travelling

hassles for 25%, safety from COVID-19 for 15%, easy access to learning material for 11% and no location boundaries for 8% of the students as provided in figure 4.

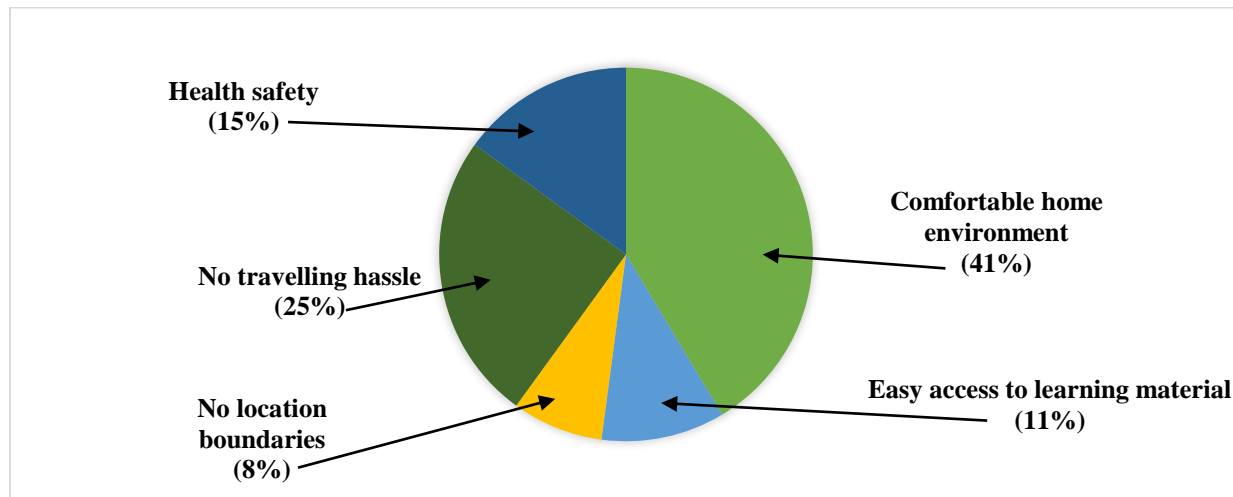


Figure 4: The biggest advantage of online classes according to students.

There are different methods of teaching to keep the students engaged in physical classes; similarly, the teachers had to modify their teaching to do the same in online classes. According to 47% of the students, slides kept them attentive,

19% found discussions and tests/quizzes to be more effective. In comparison, 15% of the student's believed interrogations were the most engaging activity during class, as mentioned in figure 5.

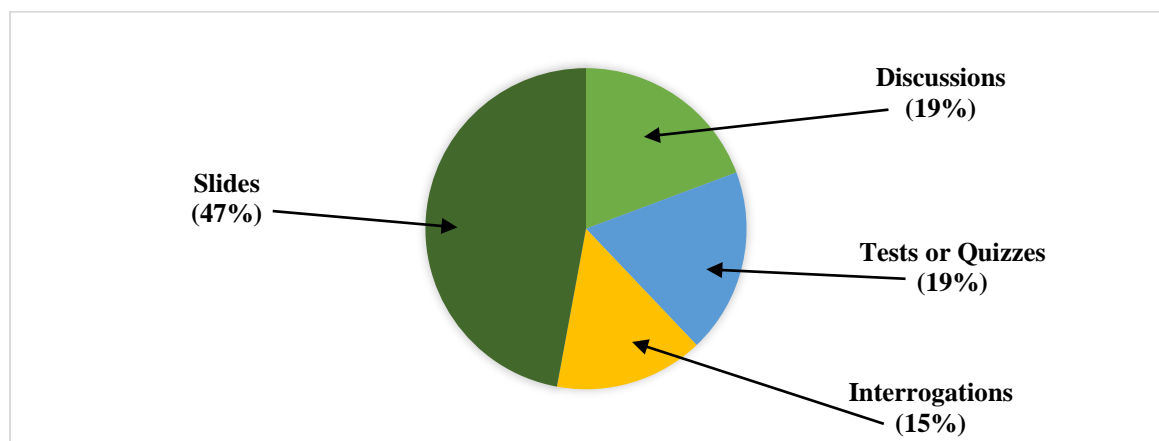


Figure 5: Most engaging activities during online classes.

With virtual learning being the new normal, many soft-wares emerged to carry it out. The participants of this study used MS Teams. The level of students' satisfaction with the

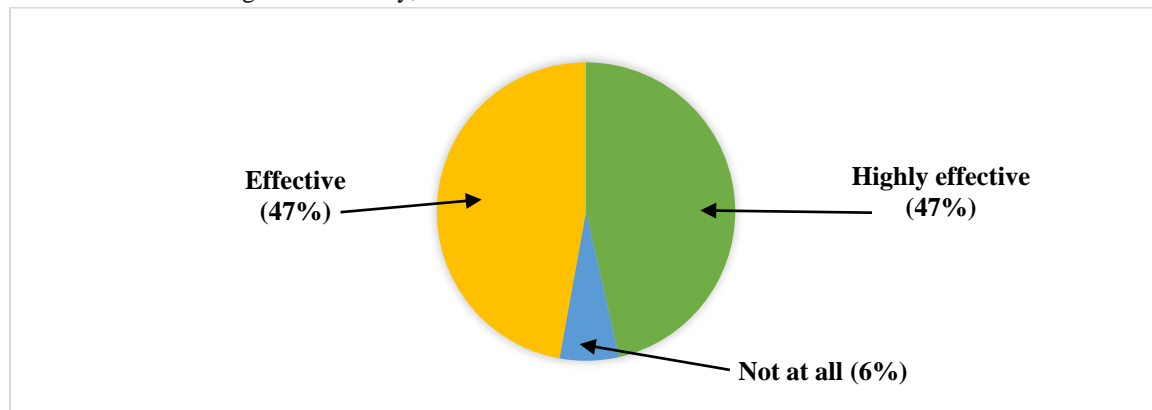
software was assessed, which revealed that 52.8% were satisfied, 26.4% were quite satisfied, and 20.7% were not satisfied with it, as given in table 4.

Table 4: Satisfaction of students with the software used for online learning.

Level of satisfaction	Frequency	Percentage
Satisfied	74	52.8%
Highly satisfied	37	26.4%
Not satisfied	29	20.7%

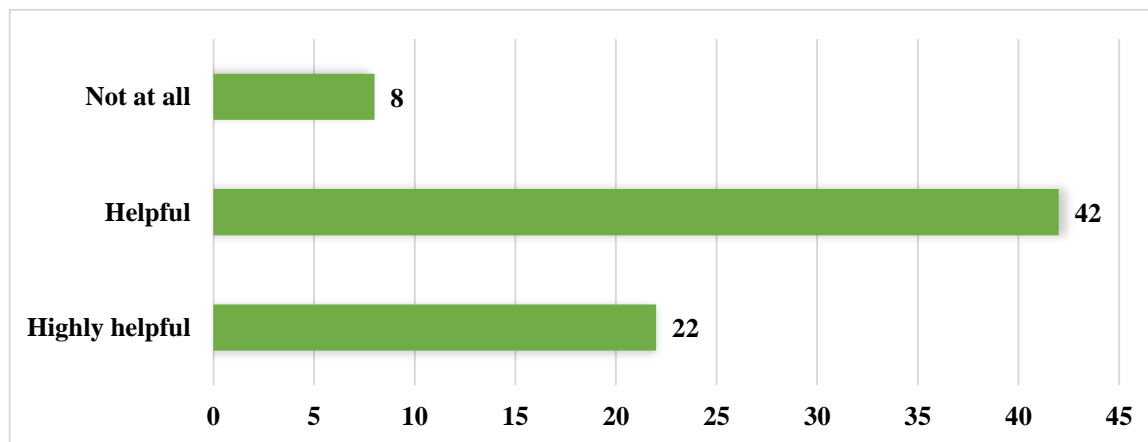
As e-learning was a new method to transfer knowledge to students during the pandemic, it was important to be efficacious. According to the survey, 47% each found it to

be highly effective and quite effective, while 6% did not at all. It is shown in figure 6.

**Figure 6:** Effectiveness of online learning according to students.

As online classes were quite new to the faculty members in contrast to traditional teaching methods, it was necessary to provide them with resources to carry it out without any obstacles. In this survey, the same was assessed, which

revealed that 42% of the faculty members found the college/university to be quite helpful, 22% highly helpful, and 8% not helpful in providing adequate resources for online teaching (Figure 7).

**Figure 7:** Helpfulness of the college/university in offering the resources to teach online.

Among many pros of online classes, time management is a pronounced one. One aspect of the study evaluated time

management while teaching virtually. According to the faculty, 34% believed it to be quite helpful, 20% highly

helpful, and 16% not helpful in managing their time during the pandemic, as shown in figure 8.

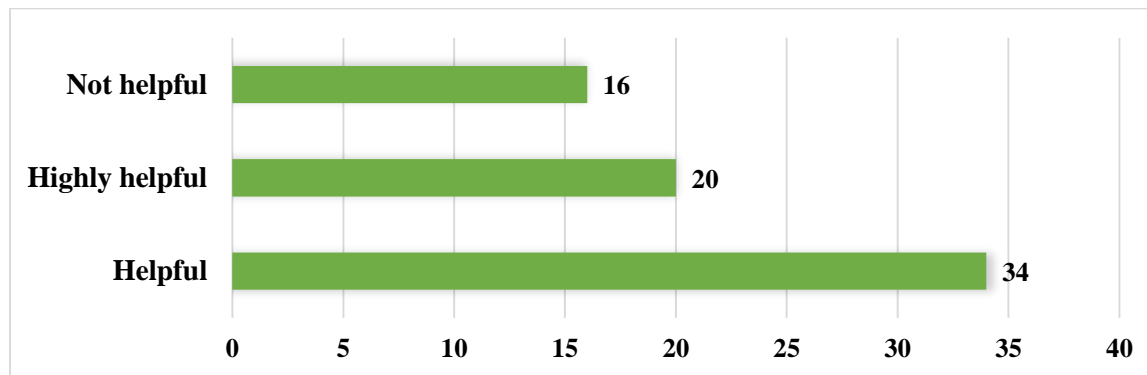


Figure 8: Time management while teaching online according to faculty members

4. Discussion

COVID-19 is a contagious airborne disease caused by SARS CoV-2. Symptoms of COVID-19 are variable. In December 2019, the first known case was identified in Wuhan, China. Global heterogeneity in the genomic structure of SARS-CoV-2 has a crucial role in the current outbreak of coronavirus illness COVID-19 (8). According to research findings, the general root ancestry of global genomes varies depending on the extent of adaptability to the host (9). Knowledge of citizens' active roles in epidemics or pandemics is critical for appropriate planning and response, as their degree of knowledge, perception or misperceptions, behaviors, and trust may all impact the efficacy of activities and policies undertaken by health systems and authorities. Recognizing the importance of KAP surveys in COVID-19 management, several nations have begun to gather similar data at the national level (10-12). Due to lockdown, universities run their edifications online. Currently, with vaccination, things are coming back to normal, but a majority of the work is still done virtually (13). This study was conducted at Women Medical and Dental College, Abbottabad. The opportunities and challenges of online teaching and learning were analyzed through the distribution and circulation of questionnaires. 140 questionnaires were given to the students and 73 to the faculty members, out of which all the participants responded.

According to the survey, all the respondents belonged to the medical field. Students being undergraduates, 76% MBBS and 24% BDS. It was inquired from the students and teachers about their preference between online and physical classes. The results were that 88.5% of students preferred

physical classes while 11.4% preferred online education. 60% of the faculty members preferred and liked the physical method of teaching while 40% preferred online. Thus, the students and faculty members preferred the physical method of learning and teaching because it comes with better interaction and communication between them. Physical presence helped the students to be more attentive than they would be in virtual presence.

Recently, research was conducted at Al-Faisal University, Saudi Arabia, to assess the opportunities and challenges of online education during the COVID-19 pandemic. It was a cross-sectional study carried out from March to May 2020 (14). Among the respondents, 62.5% preferred a combination of traditional and online learning, 25.5% preferred traditional learning, and 12% preferred online (15). Some aspects were absent in online learning; therefore, most students and teachers prefer face-to-face learning (16). Research conducted in India with a total of 170 MBBS students and a descriptive observational study conducted through google forms showed similar results where 52% of students used mobile phones, 36% used laptops, and 12% used tablets for an online system of learning (16).

In this study we reported that the major issue faced by the students and the reason to miss their online classes was internet connectivity and device problems which accounts for 68% of the total participants—electricity failure for 23% and completion of chores for 9% of the students. For the faculty members as well, the internet connectivity issue was one of the main hindrances. Challenges of online education reported concerning medical education so far include time management issues, use of digital tools, students' evaluation, communication, and the lack of in-person interaction (17). Furthermore, online education may not fully equate to

physical classes in terms of access and the quality of teaching (17). Some students do not have availability to laptops or high-speed internet at home. Also, older internet users find online education the least beneficial due to technophobia (17).

According to our survey research conducted in Bishop Cotton Women's Christian College, Karnataka, India, in 2020 it showed that about 76.3% of faculty members believed that there is insufficient student-teacher interaction in online classes, and 56.5% reported that it's a task to engage students in online classes due to increased distractions thus resulting in a short attention span. 32.9% of teachers had software and device incompatibility issues. It was found that during online classes, the main issue they faced were excuses made by students and missing classes, e.g., network issues, dis-connectivity, poor audio and video etc., and it is difficult for them to know if these are genuine reasons or just excuses to escape the classes (18). According to a research conducted at the College of Medicine, Qassim University, Buraidah, in 2020, the data recorded suggested that 26.4% strongly agreed that online assessments are effective in testing students' knowledge, while 13.6% disagreed and 16.4% neither agreed nor disagreed (19). There is a contradiction between these two study results because of the lack of infrastructure and good internet availability in Pakistani universities, which is not the case in developed countries (16). According to this survey, the most engaging activities during online classes were the following percentages- slides, 47%, discussions, 19%, tests or quizzes, 19% and lastly, interrogation, 15%. Slides were preferred because of easy access and availability at all times. They also give a brief overview of the topic, making it easier to study. Similar research was carried out at the University of Delhi, India, in 2020 (20). This survey conducted in WM & DC was done to assess the level of satisfaction of students with the software, according to which 52.8% of students were satisfied, 26.4% were highly satisfied, and 20.7% were not satisfied with it. Another research was carried out at Robert Morris University in the US (21). In 2020 video conferencing platforms like Zoom, MS Teams or Cisco Webex arose with unprecedented growth. For good software to be used, only a few models passed the reliability criteria. The students preferred MS Teams to Zoom because it did not have as many distractions as Zoom. Although there was a complaint regarding the MS Teams app crashing unexpectedly, participants of the study were more in its favor (22).

Research was conducted at Jan Kochanowsky University, Poland. The most frequent advantages of e-learning chosen by respondents were the ability to stay at home (69%), continuous access to online materials (69%), the opportunity to learn at your own pace (64%), and comfortable surroundings (54%) (23). Most respondents chose a lack of interactions with patients (70%) (24). An outcome of this research revealed how helpful was the college in offering resources to the faculty to teach online. 22% of the faculty members found the college to be highly helpful, 42% quite helpful and 8% not helpful in providing the resources in online teaching. The administration and the IT department played an efficient role in providing all the necessary technological support. Some other research conducted at the University of Texas and the University of San Diego revealed that faculty members reported having to alter their exams or assignments, lowering the amount of work given to students adjusting their expectations for students and allowing students to choose pass/fail grading (25). The department created new communication pathways to meet formal and informal social and professional needs. They also held sessions to practice new technology such as Zoom to learn how to facilitate remote teaching better (25). Similar research was posted on Boston College University Libraries. Findings of this study from over 1/3rd of participants indicated no association of any specific time management practice. The rest of the participants found online teaching quite effective in time management (26).

5. Conclusion

This study revealed the opportunities and challenges of online medical education during the COVID-19 pandemic at Women Medical and Dental College, Abbottabad. The challenges that came forward included lack of student-teacher interaction, communication gap, stress related to students' assessments, internet connectivity issues, software and device incompatibility and lack of clinical exposure. The biggest challenge faced by students and teachers was adapting to a new and modern method of education, especially in a country like Pakistan, where it had never been introduced before in medical education. Despite these challenges, this system also brought many new experiences and opportunities like confidence building, time management and familiarity with technology. The greatest advantage had online learning and teaching as an alternate option. This added flexibility and enabled the students to continue their education, thus not academically bringing as many limitations as the previous pandemics did. Equitable distribution of resources can pave the way to a better future.

All educational institutions should be well equipped to build up their information technology framework in times of crisis.

6. Recommendations

Many strategies have been put forward to enhance the quality of online education. These include:

1. An institution should provide learning material, effective student-teacher interaction and participation and give adequate breaks during classes.
2. The faculty should be given training regarding the use of online modalities and developing a curriculum which can easily be conveyed virtually with the minimum cognitive burden on the students.
3. Clinical sessions should adapt case-based learning for a better understanding of skills.
4. Students should be more cooperative in terms of attentiveness and focus during classes.
5. Pakistan should develop a policy to ensure proper internet connectivity and the required infrastructure to reach all areas, including remote towns and communities, to aid the students in online classes.
6. Colleges and universities should ensure well-developed IT departments with adequate technology to improve their standard of e-learning.

Hence, all these aspects should be considered while establishing a web-based schedule to make online education more efficient.

Conflict of Interest The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this article.

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