ORIGINAL ARTICLE

The Major Challenges Faced by Medical Lecturers in Teaching, Learning and Assessment During the Covid-19 Pandemic: A Hermeneutic Phenomenology Study

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ABSTRACT

Introduction: Online teaching, learning, and evaluation are inevitable to ensure the continuity of medical education delivery throughout the COVID-19 Pandemic. Based on medical lecturers' experiences during the COVID-19 movement control order (MCO), this study looked into the problems of implementing online teaching, learning, and assessment. **Methods:** During the COVID-19 MCO, a hermeneutic phenomenology study was conducted using reflective written exercises to explore the challenges faced by medical lecturers. The medical lecturers were given online open-ended questions via a Google form to help them reflect on their previous experiences. The reflective written comments were analysed by ATLAS.ti. Thematic analysis was performed for coding and categorizing the reflective comments into meaningful codes, categories, and themes. **Results:** A total of 29 medical lecturers responded to the open-ended reflective questions. They were 16 females, and 13 males representing four main medical specialties: basic science (n=10), medical-based (n=9), surgical-based (n=5), and laboratory-based (n=5). The thematic analysis identified five themes of challenges faced by medical lecturers during the pandemic that include ICT facility and support, lecturers' receptivity, online students' engagement, online assessment, and online teaching. **Conclusion:** This study emphasised the common obstacles faced by medical lecturers during the COVID-19 MCO in order to maintain the continuity of medical education delivery. Students, lecturers, curriculum, ICT facility, and technical assistance were all part of the issues. Several proposals for charting ways to improve medical education delivery during the epidemic were explored.
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INTRODUCTION

The coronavirus pandemic, which the World Health Organization (WHO) declared in 2020 (1), has had a significant impact on not only health but also the economy and education (2). This had somehow forced every sector to modify and adapt to the new sudden situation while maintaining a strict action in order to curb the pandemic. In order to break the chain of transmission, Malaysia, like many other nations worldwide, implemented the Movement Control Order (MCO) on 18 March 2020 in accordance with the Prevention and Control of Infectious Diseases Act 1988 and the Police Act 1967. This includes a prohibition of people movements and large assembly, including educational activities (3). This posed a significant challenge to the educational system in terms of ensuring the continuity of the education, which was previously

conducted through face-to-face teaching and learning activities.

Universiti Sains Malaysia (USM) was no exception in needing urgent active action to transform traditional face-to-face teaching and learning into online not only in terms of teaching and learning but also assessment throughout the MCO period (4). USM's lecturers are given options to conduct synchronous or asynchronous teaching through several online platforms such as Webex, Microsoft Team and e-learning portal. The assessment method undergoes a major revamp, with the final examination being converted into a continuous or online assessment. Despite the restrictions imposed by the MCOs, the top management of USM has been very committed in ensuring that teaching and learning continue. The USM Centre for Developing Academic Excellence (CDAE) was tasked with conducting intensive training sessions to equip lecturers with varying levels of information technology literacy.

The online teaching and learning technologies offer more cost-effective, flexible approaches, and accessible methods for enhancing and expanding educational opportunities (5). However, despite its greater advantages over the conventional approaches, it was earlier regarded as a supplementary approach rather than replacing face-to-face teaching and assessment methods (6). Thus, the online teaching was initially implemented to address the weakness of the traditional face-to-face teaching such as access and flexibility in formal teaching activities, and to provide students with greater autonomy in their pursuit of completing their studies (7). Although there has been an effort to support the expansion of blended learning in USM, technology-enhanced learning has never completely replaced face-to-face instruction in medical curricula (8). Despite the enthusiasm and increase in technology-enhanced learning (9), medical education still requires the face-to-face teaching to achieve learning outcomes such as clinical skill acquisition and inculcating professional values (10). The adoption of online learning is inevitable in light of the MCO's restrictions, posing implementation obstacles and difficulties, especially when the transition is abrupt. The attitudes of teachers and learners are strong determinants of successful implementation and effectiveness of online learning (11,12). Delfino et al. (2004) reported that teachers' interest and curiosity are the main pushing factor in trying the online learning mode. However, the main resistance to online learning mode is logistic and organisational problems due to the lack of access to the internet and lack of skills, and many educators still have strong preference for face-to-face interaction (11). A lecturer's reluctance to conduct online instruction may also be influenced by the perception that distance and online teaching allow students total freedom of time and space to participate, thereby reducing the effectiveness of the instruction (13).(13). This perception contradicts the collaborative learning processes which require reciprocal commitment in real-time or non-real-time settings (11). Inadequate digital literacy, computer anxiety, a strong belief that online teaching is incapable of achieving learning outcomes, and students' strong preference for face-to-face instruction have also contributed to the resistance to online learning (13,14).

However, the success of online teaching is dependent on a complex interplay of personal, pedagogical, contextual, and organizational factors within higher education institutions which can overcome the teacher's resistance and misconceptions regarding online teaching and learning (15,16). Training of online teaching skills as part of continuous professional development, internet support and web-based platforms with proper recognition and rewards are able to foster positive educational environment (15). This will increase motivation and willingness to conduct online teaching as one of their routine teaching approaches.

Nonetheless, the unprecedented outbreak of the COVID-19 pandemic has changed the perspective of online teaching and learning. As a result of the complete lockdown or movement control order enforced in a number of nations, educators worldwide have no choice but to engage in online teaching and learning in order to continue providing students with education. This is also a unique real-time experience by the medical lecturers in School of Medical Sciences, as they must conduct online teaching and learning according to their own capabilities and limitations. Some lecturers even echoed their concern regarding the conversion of undergraduate and postgraduate clinical programmes from face-to-face to online learning, which they believed could hinder the achievement of learning outcomes related to clinical application and skill acquisition.

Moreover, the process of converting workplace-based teaching (i.e., ward round and clinic attachment) to online learning requires intricate planning and implementation to ensure the achievement of learning outcomes. Regardless of all these challenges, the online teaching and learning at USM's School of Medical Science (SMS) has been operating smoothly. However, without first conducting a thorough evaluation, it is still premature to draw conclusions about the effectiveness of online teaching and learning in SMS.

The SMS, USM faced a great challenge in conducting online teaching and learning. It has been documented that its lecturers use e-learning the least, particularly medical lecturers. This is mainly due to the nature of clinical teaching, which was previously more hands-on and face-to-face in hospitals. In addition, medical lecturers, who are also clinicians, are somewhat affected by the workload related to the COVID-19 outbreak. Many of them faced difficulties during the first phase of MCO (between 18 March and 31 March 2020). They need

to adapt to the online teaching and learning methods, which was made compulsory by the top management. As a result, medical lecturers who are also clinicians were forced to juggle clinical work and teaching, and a two-week adaptation period was deemed insufficient. Furthermore, converting learning approaches for clinical programmes from face-to-face to online would limit the achievement of learning outcomes, particularly those related to clinical application and skill acquisition. Converting workplace-based teaching (i.e., ward rounds and clinic attachment) to online learning requires intricate planning and execution so that learning outcomes are not jeopardised. Regardless of all these challenges, online teaching and learning at SMS, USM has been running smoothly, at least during the second and third phases of MCO. Hence, this study explores the challenges in implementing online teaching, learning, and assessment at SMS, USM during the MCO period based on experience of the medical lecturers.

MATERIALS AND METHODS

Study Design

This study applied the hermeneutic phenomenological design to investigate lecturers' lived experiences of preparing and conducting teaching and learning as well as assessment activities amidst the COVID-19 lockdown, using the reflective written exercise.

Participants and eligibility criteria

The study involved 29 medical lecturers (13 males and 16 females) from Universiti Sains Malaysia's (USM) School of Medical Sciences, Health Campus. USM medical lecturers are defined as either permanent or contract academic staff who are under the medical lecturers' scheme (DU) and worked at USM between June 2019 and June 2020.

Purposive sampling technique was used to select the participants, based on several eligibility criteria, namely: (i) medical lecturer who had formal teaching session with undergraduate or postgraduate students during the COVID-19 lockdown; (ii) medical lecturer who had experience conducting online classes and invigilating online exams during the COVID-19 lockdown; and (iii) medical lecturer has no formal qualification in instructional pedagogy and technology.

Sample size

The sample size for this study was determined based on the saturation concept, which describes the achievement of adequate number of sample size when there is no new emerging data during the data collection process (17). Since the saturation of samples in a qualitative study is greatly dependant on the aims and scope of the studies, study design, heterogeneity of participants, budget and resources, and the number of selection criteria (17–19), the sample size of this study was carefully determined after a detailed analysis of these factors. Charmaz (2014) recommended that an adequate sample size for qualitative research is 25 subjects, while Ritchie et al. (2003) suggested that the sample size should not exceed 50 subjects. Mason (2010) suggested that a sample size of 7 to 89 would be adequate for a qualitative. Considering the factors and recommendations, the minimum sample size of this study was set at 25 subjects.

Survey Tool

A survey consisting of a socio-demographic background and open-ended questions pertaining to the lecturers' experience in preparing and conducting online classes and examination activities amidst the COVID-19 lockdown were administered. A written consent form and the survey questionnaire were developed using the Google Forms. A reflective written exercises related to the challenges in preparing and conducting online classes and examination during the COVID-19 lockdown was conducted using the six open-ended questions provided in the survey form (20).

Data collection

The link to the Google form containing the research information, written consent, and questionnaire was emailed along with the invitation letter. Participants who agreed to participate in this study were required to read the research information sheet, submit their written consent, and respond to the questionnaire online. The responses were captured and automatically transferred to the survey excel sheet.

Data Analysis

The reflective written comments in the google form were exported to excel and converted into pdf format before being uploaded into the ATLAS.ti software, version 22 (Scientific Software Development, GmbH, Berlin, Germany). Thematic analysis was carried out independently by two researchers, whereby the participants quotes were grouped into meaningful codes and categories (21). Themes were formed based on the similarity and pattern of the codes and categories. The emerging codes, categories, and themes were discussed with members of the research team for feedback and meaning validation. The qualitative data analysis process is illustrated in Figure 1.

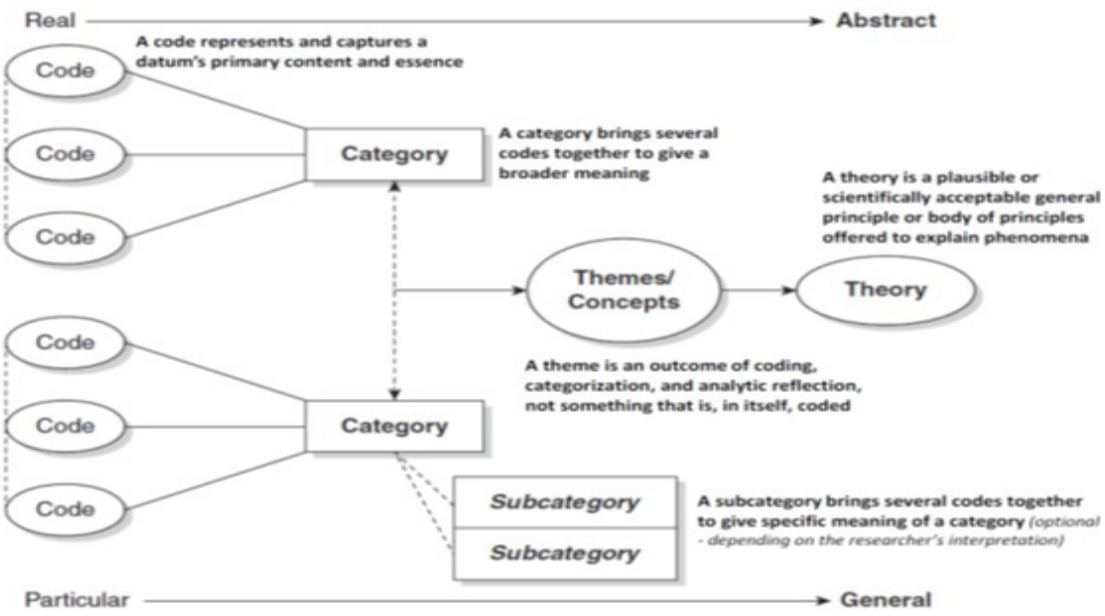

Figure 1: The codifying and categorising process of the reflective comments based on Saldana (2015) recommendations.

RESULT

Participants' backgrounds

A total of 29 medical lecturers responded to the open-ended reflective questions online, and they were 16 females and 13 males. Based on the specialty, 10 were basic science, 9 medical, 5 surgical, and 5 laboratory-based medical lecturers. Out of 29, 21 medical lecturers have more than 10 years of working experience, while the rest have less than 10 years. Approximately, 55% of them (n=16) had not attended any online teaching, learning, and assessment training, while the rest had participated in the training.

Themes and Categories

The thematic analysis identified five themes of challenges faced by medical lecturers during the pandemic that include i) ICT facility and support (9 codes, 57 quotes), ii) lecturer's receptivity (17 codes, 38 quotes), iii) online students' engagement (22 codes, 35 quotes), iv) online assessment (21 codes, 30 quotes), and v) online teaching (9 codes, 12 quotes).

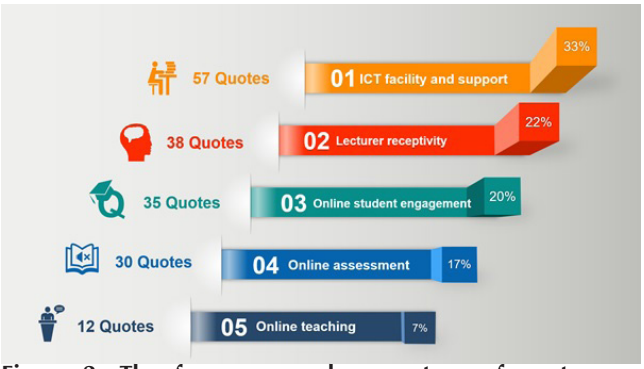

Figure 2: The frequency and percentage of quotes per theme representing challenges faced by medical lecturers in Universiti Sains Malaysia during the COVID-19 pandemic.

Theme 1: ICT Facility and Support

ICT facility and support refer to the equipment and assistance to ensure uninterrupted teaching, learning, and assessment online. It is closely related to internet connection quality, hardware and software for online learning, support services to technical issues, learning management systems, and affordable internet services. Several participants expressed their concerns over internet connection during online learning:

Sometimes the sessions were ruined by an unstable internet connection. Some students attend, but they can't actively join the session because of a connection problem. (P1)

The main challenge is an internet connection, especially for a student. Lecturers also need to buy new gadgets for teaching purposes. (P13)

The line for online teaching sometimes was not stable. Loss of the connection in between. Even using the USM line. Once a while, needs to switch from desktop to handphone (few times actually) (P14)

Students cannot connect due to poor internet service. Students have to spend more money to top up credit, as lecturers need to find the best way to save students' money in data. (P17)

Other participants expressed their concerns over technical issues during online learning:

Attending online teaching is frequently interrupted by background noises and unmuted participants' microphones. (P12)

Providing the practical online session is interesting if the camera is good, but you need more time because of the Internet connection problems. Some images and software have problems during online teachings, like mirax viewers. It frequently blinks during online. And difficult for me to teach. On the student side, they

claim it's ok. (P23)

To invite the whole batch of students for teaching. Difficulty using the Web tool and limited resources for teaching except for power point. Need more access to other software. Like I have prezy and can be uploaded to e-learning. But students might not be able to view if they don't have that software on their laptop or computer. (P23)

Many academicians have to learn on their own; YouTube and recordings do help. But there is a need 'ad hoc' support, i.e. when you need it. Clearly lack of support from supporting staff like PPKT or academic office. Yes, you watch videos or YouTube, you try you face problems and need someone to show and properly explain. (P24)

Unfortunately, no participants expressed their good experience with the ICT support and facilities.

Theme 2: Lecturer's Receptivity

Lecturer's receptivity refers to the state of readiness of lecturers to use and leverage technology to deliver education via online platforms. It is closely related to the ability of using various online platforms for teaching, the experience of using technology for online education, the ability to handle or manage online education, and the learnability of new technologies for online education.

Participants expressed their concerns on their preparedness for online education:

I was afraid because I was not used to online teaching. (P6)

I am not that good with technology; slight glitches can affect the whole program. Communication with the outside nonphysical audience may not be that satisfactory. (P16)

Have to prepare the camera, microphone, your internet must be strong but weak sometimes

… always a technical problem due to poor connectivity, people did not off the microphone, disturbing other, need to spend more money to buy camera microphone, really difficult due to poor in IT ...do not how to set up the session...to share ...need time to learn. (P17)

Inexperienced using software frequently disrupts the flow of the teaching session. (P20)

I made videos for my lectures with difficulty due to inexperience, and it was not satisfying. (P27)

Preparation requires a lot of self-exploration of new tools which may consume extra time compared to the conventional teaching styles. (P28)

Despite the concerns over the preparedness for online education, a number of participants did express their positive experience with online education:

The best experience was the realization that there is online learning software now that can be used to teach online such as Webex that I never used before. (P7)

Try to do a video using slide show PowerPoint and upload through YouTube, manage halfway, fail to convert into video, however best experience because it was the first time in my life actually attempting to do something technical like that, actually doing it, spend a lot of time on it even though it fails to materialize. (P10)

Get new experience using PowerPoint to record the voice and upload the lecture notes on YouTube. (P18)

My best experience was that I got the chance to learn about various tools that can convert our PowerPoint slides to digital instructions. There were hiccups here and there during the learning phase, but with time I managed to overcome them. I am not an IT savvy person. Having the chance to explore and use various tools give me good feelings and perceptions that I am ok with IT. The best that I've done so far during my online teaching was to conduct an interactive lecture using the H5P application. (P25)

Theme 3: Online Students' Engagement

Online students' engagement indicates that when students are learning or being taught online, they demonstrate passion, interest, a high level of attention, curiosity, and optimism, which motivates them and encourages them to continue their online education. It is closely related to the students' ability during online learning to interact with teachers or other learners, maintain their interest throughout online learning, communicate with teachers, participate in learning activities, and focus on the learning process.

Many participants expressed their concerns over the difficulty of engaging students during online learning: Cannot get the body language from all students, sometimes they just shut the video off. (P1)

During teaching we could not see the student face and did not know their true reaction. (P13)

No real-life response and difficult to assess real students understanding of lessons taught. (P15)

Students can sleep. I do not know which one is paying attention and who is sleeping. (P17)

I would say the response of students during online learning. The students might listen and engage in the class, but it was very difficult to assess their interaction and response. This is very awkward for me because I'm the one who always does activities in my class even during lectures. I love to hear students responds to my questions and laugh at my joke. Unfortunately, I could not get these in online activity as their microphone are all muted, and some did not even turn on their videos. It leaves me feeling incomplete and unsatisfied after each online class. (P25)

Sometimes students cannot hear us, sometimes, we cannot interact with students. Sometimes there were echoes and other additional sounds which distracted me, and it was tough to concentrate. I cannot assess the students whether they understand what I am saying since I cannot see the body language that they portray. (P27)

Despite the difficulty to engage students during online learning, a number of participants did express their positive experience engaging their students online:

I used Webex for my 1st PBL session during the early COVID-19 season. Interestingly, the teaching session was not too formal and made my students feel comfortable talking. I was also comfortably reading the scheme given to me without students knowing it. (P1)

Interaction with students without the boundary of time and place. (P5)

I got to learn new things especially in recording the lecture and students liked the way I used YouTube as a lecture platform. They can freely comment and respond in the comment section. (P13)

*The number of participants exceeds the number of students in the group, which means the information can be disseminated more than the specific group of students in the timetable. This opens the possibility that now anybody can learn. (*P28)

Theme 4: Online Assessment

Online assessment refers to any activities for assessing students' attainment of the expected learning outcomes through online platforms. It is closely related to the preparation of online assessment, administration of the online assessment, ensuring the integrity of online review, online assessment experience, marking online assessment, and ensuring the constructive alignment of the online assessment.

Many participants expressed their concerns over online assessment:

Assessment is difficult. We need to modify the questions that can be asked online... Viva is ok, but OSCE interactive cannot be done. (P23)

I did online marking for the exams. it takes more time compared to non-online. (P24)

Very easy to 'cheat' during the online assessment. Students themselves inform! There are many ways. you look at the computer but can search for answers at the same time! (P24)

I think the questions that can be asked on an online platform are limited in the sense that the questions could not really assess the 'psychomotor component - 'doing part'. (P25)

My ten-cent opinion.... when conducting an assessment using online, it is very difficult to ensure that students do not cheat. They are IT savvy, they know unthinkable ways of cheating and copying. I feel. (P27)

Clinical skill assessment is difficult through online. (P28)

Despite the difficulty of online performance assessment, a number of participants did express their positive experience assessing their students online:

I just assessed their presentation, but you can also assess the group cooperation. When they helped each other from the other end if there was a problem with the internet connection or technical problem. (P22)

I have created some exam questions or quizzes for my e-learning. E-learning USM is a good platform for assessment. Our master students also had their viva online, and everything went smooth. (P25)

Theme 5: Online Teaching

Online teaching involves the acquisition of skills and knowledge that are valuable to the students. It is closely related to online teaching modes, online teaching methods, online teaching skills, and preparation for online teaching.

Participants mentioned some challenges to online teaching:

Clinical teaching is impossible to be run online. Although the subject can be taught in a theoretical manner, practical such as palpation for hepatomegaly would be remotely impossible to be trained online. (P5)

The challenge is to maintain the interest of students throughout the learning process. (P7)

Online teaching and learning are nowhere as effective and give pleasure compared to face to face. ... Sometimes, students flip in and out of class due to lost connection. This can happen even when a student is living in an urban area. (P24)

Many students reported preferring face to face teaching and learning compared to online, with face-to-face teaching and learning, you can see/appreciate students facial and body expressions, responses are more spontaneous. Often, videos will need to be 'off' at least in interfered with the sound system. Online learning, to me, is only for last resort, when face to face teaching absolutely cannot be done. The MCO is one such example. but, to make it regular teaching and learning I do not think it is a good idea. (P24)

Teachings hands-on for example the clinical skill, is difficult to be conducted online. (P28)

Despite the challenges for online teaching, a number of participants did express their positive experience with online teaching:

Not sticking to a place and time when teaching is running. (P5)

My best experience is being able to teach ultrasound topics to an audience of more than 30 pax using Webex. The clarity of the slides and audio makes me eager to teach more online than offline. (P12)

Students like synchronous teaching rather than prepared videos. The attendance is around 128 of 148 students when I give synchronous teaching (P23)

The number of participants exceeds the number of students in the group, which means the information can be disseminated more than the specific group of students in the timetable. This opens the possibility that now anybody can learn. (P28)

DISCUSSION

Medical lecturers faced a difficult challenge in effectively engaging their students during online learning due to the difficulty in sustaining students' motivation, interest, curiosity, and attention to the subjects being taught via a digital platform. The lack of face-to-face interaction adds a further challenge as it limits the authentic interaction between medical lecturers and learners (22). As a result, the number of learners who are truly engaged during online learning gradually decreases over time. Students' short attention span, multi-tasking of the teacher while conducting the online session plus poor audio and video quality contribute to less engaging online learning. However, in this study, a few medical lecturers did find that more students joined than the actual number of students in the class. How do we know that students are engaged? This is a sensible question but a bit tricky to have straightforward answers. Based on our experience, three indicators can be used to determine students' engagement in online classes. The indicators are i) learners exchange feedback with medical lecturers, ii) learners actively participate by sharing their understanding on misconceptions especially those related to their assignments or assessments, and iii) learners asking relevant questions to the learning outcomes. More important is medical lecturers need to find educational approaches to increase students' engagement during online classes. However, this study notes the challenges of lecturers in learning new approaches and the need for guidance. Three useful educational approaches that can be used to promote students' engagement during online learning are inquiry-based learning, simulation-based learning, and peer-based learning (23). In inquiry-based learning, learners are instructed to investigate, analyse, and resolve open, unstructured, and authentic scenarios, for example, problem-based learning. In the simulation-based learning, students are presented with conceptual simulation, procedural simulation, or role-play simulation tasks. It requires learners to develop their knowledge and understanding by completing an authentic or simulated tasks based on real-world cases to obtain different experience on a given condition (23). This requires training not only for medical lecturers but also for students, which further adds to the challenges.
Interestingly, a recent paper has shown that delivering online lectures based on the cognitive load theory and multimedia learning principles is an efficient way to promote cognitive engagement and learning motivation during online classes (24). Obviously, the challenges to engage students during online learning are real (25). Therefore, preparing medical lecturers with relevant digital skills is essential in ensuring meaningful online learning experience (26) and the continuity of educational delivery to medical students (4). This survey has shown that despite all the challenges, lecturers are determined to ensure the continuity of education and find ways to improve. The medical lecturers' unsatisfactory experience was most likely caused by a lack of skill and a lack of time to master the skill.

It is evident from this study that a mixture of experience in teaching through online platforms among medical lecturers had contributed to their receptivity to online teaching and learning during the pandemic. Although online classes were used prior to the pandemic, they were limited to distance learning programmes and were not made compulsory for other programmes. Moreover, the inclination of medical schools to produce safe and competent medical graduates requires a curriculum that accommodates the development of clinical competency through physical interactions (27). This predisposition could have contributed to the lack of lecturers' experience in handling the online teaching sessions. Therefore, it could be argued that lecturers' receptivity was greatly influenced by their previous experience in conducting online learning. A study by Alea et al. (28) revealed that educators who had little experience conducting online teaching before the COVID-19 pandemic would feel insecure and perceived themselves to be incompetent in teaching through an online platform.

In addition, the lecturers' proficiency with computers, online applications, software, and mobile tools is a crucial component of their readiness for online teaching (29). The rapid evolvement of technology could be an issue with medical lecturers who naturally have extra clinical tasks. Hence, the abrupt change in the medical curriculum during the COVID-19 pandemic could have taken an emotional toll on the medical lecturers as their teaching burden escalated (30). Despite the lack of data to support such a claim, this issue was discussed in a number of medical education webinars that highlighted the problems faced by medical lecturers worldwide (30,31). These webinars highlighted that medical lecturers are exhausted as a result of juggling between clinical work and shifting their teaching online (30). Moreover, due to the ongoing need for practical and clinical skills training, medical lecturers must repeatedly conduct small face-to-face group teaching in order to meet the physical distancing requirement (30,31).

Nevertheless, some lecturers perceived these practical and logistic challenges of online teaching and learning as an opportunity for them to learn the technology-enhanced tools and pedagogy. This unprecedented situation has motivated the lecturers to explore the various tools and applications that support their lesson plans. Indeed, during the pandemic, online teaching and learning were reported to have some advantages, mainly flexibility and promotion of student-centred learning (32). It was also reported that lecture delivery becomes easier as lecturers could deliver their lectures from home at their own time, especially in asynchronous form (31). In addition, the teleconferencing tools available are also useful to facilitate lecture delivery that is comparable to a conventional lecture (31).

Due to the alarming threat of COVID-19, universities must change their teaching approaches from face-to-face to online teaching and as a result of technological advancements, we have access to new tools and processes to conduct our online teaching. However, this study found that many students still prefer face-to-face teaching sessions rather than online teaching because of the authentic interaction and communication between teachers and students. Vrasidas & Mclsaac (2010) mentioned that verbal and non-verbal cues are lacking during online teaching, affecting the understanding of the subject being taught (33). This make the teachers reserve online teaching as the last mode of teaching and refuse to use it as a regular mode of teaching. Likewise, Wright (2017) also mentioned that students preferred class lesson over the online version, basically for a better understanding of the topic (34). In medicine, the students need to examine the patients in order to determine their diagnoses. The medical lecturers claim that clinical teaching, such as examining the patient's abdomen, cannot be taught online. Thus, this is the limitation of teaching online for medical students, which can result in inadequate technical and practical skills. This clause is supported by Gaman et al. (2020) who mentioned that it is crucial to learn from actual patients for clinical practise, and that online teaching cannot replace this (35). Thus, the lack of interaction with patient led to poor communication skills. Khadijah (2020) echoed a similar concern that practical and clinical work could not be conducted through online learning (32). As online teaching is sometimes one-way communication, the student's interest throughout the learning process is a major issue being voiced out by the lecturers in this study. Students will be bored and lose focus if they only listen. This is supported by the findings of Michał, et al., (2021) who discovered that the students were less active during online teaching compared to face-to-face teaching (36). Less interaction with one another and with the lecturers make online teaching less favourable to the lecturers.

Despite the challenges of online teaching, several participants expressed satisfaction with their experience and some theories also support the use of online teaching (23,24). The interactive enhancement of online teaching, as well as the flexibility of time and place, can reach a global audience and speed up the transmission of knowledge to others (37). Similarly, this study finding acknowledges that the advantages of online teaching include i) students prefer synchronous teaching over asynchronous teaching, ii) many students can be catered at the same time via synchronous teaching, iii) the ability to reach students in different geographical areas as long as the internet connection is stable, and iv) the ability for medical lecturers to teach their students from any location and time that suits their busy schedule. Taylor (2020) reported that in synchronous teaching, all students would log in at the same time and see their teacher (38). During this time, the teacher can guide, introduce new things, assign assignments, and the students can talk to each other. Students in online classes are excited because they can ask their teacher questions and receive personal responses, whereas in traditional classes, their connection with the teacher is somewhat distant (23). Obviously, online teaching provides learning flexibility and potentially increases access for both teachers and students. Poor implementation, on the other hand, can magnify inequities, especially to those who may be underprivileged by the online education due to limited access to technology (39).

We must acknowledge that students come from different geographical areas, cultures, access to technology, and urbanization levels. Some of these areas are still not well-connected to the internet. Kaup (2020) noted that one of the challenges of online instruction is the technology challenge (22), which is primarily caused by a lack of internet connectivity and access to laptops and may pose a problem for digital education.. Nambiar (2020) also mentioned that the main issues of online teaching are poor connectivity, power cuts, broadband, and poor audio and video (40). Similarly, this study highlighted that the main concern of medical lecturers is on ICT infrastructure and support for uninterrupted online learning, particularly in relation to the poor and unstable internet connectivity. Internet connectivity is an important element in online learning because poor and unstable internet connectivity causes class interruptions, students' inability to join the session, and difficulty entering the class due to constant loss of connectivity (41). Due to these internet issues, students cannot actively participate in the class discussion. They are merely a silent reader in class, unable to express their thoughts and responses to the lecturer for fear of losing internet connectivity (42). Students also have to spend more money to upgrade the internet service and obtain better coverage and data capacity because of poor internet services. This will place an additional financial burden on the students because they need to spend more money to purchase internet data and new devices for online teaching. Indirectly, this also contributes to the financial implications for lecturers as well, as they must also spend more money on appropriate online teaching devices (43). The use of an improper device or low-quality device for online learning will contribute to interruption during the online session (44). The medical lecturers also highlighted that learning to use new software for more engaging presentations during online learning is challenging. Finally, they also expressed their concerns about technical support particularly when they required ad hoc ICT support during an online session. Although they can self-learn using YouTube or other platforms, they really need assistance when it comes to technical issues (42).

Assessment is an essential component in ensuring that students have achieved and are capable of performing the expected competency as novice competent junior

doctors. Conducting assessment during a pandemic is challenging because it requires appropriate social distancing, adequate personal space, working in small groups, and using digital platforms (45). Regardless of the assessment modality, either online or face-to-face, it must be valid, reliable, practical, feasible, cost-effective, as well as promote positive educational impacts (46). One of the most important assessment principles is that assessment must fit for purpose (47), which means that the assessment must be aligned with the expected competency in any examinations. One of the most challenging aspects mentioned by the medical lecturers in this study is ensuring that assessment is aligned with the purpose via online examination. The same concern was expressed in the most recent online assessment guidelines (48), which stated, "The assessment of the affective and psychomotor domain in the emergency remote teaching (ERT) situation is difficult, especially in medical education assessment for outcomes such as clinical skills, professionalism, empathy and teamwork. … However, there is still room for creativity in this regard; there is a cognitive component in clinical skills" (48 p. 60-61). One of the validity aspects is the response process related to assessment quality control, such as assessment preparation, assessment administration, assessment integrity, assessment scoring process, and familiarity with assessment format (49). Unfortunately, medical lecturers have echoed these validity aspects as significant challenges in conducting an online assessment during the pandemic. Thus, these potential threats to the validity of online assessment must be addressed with appropriate actions. Among the immediate actions that can be taken are ensuring medical lecturers are familiar with the online assessment system, providing administrative support to medical lecturers in order to carry out the assessment, and using the proctoring online assessment system to increase the integrity of the assessment. One important lesson is that it is critical to ensure a valid online assessment practise in order to verify students' attainment of the expected competency as future doctors.

This study identified five common challenges medical lecturers face during the MCO, including online students' engagement, online assessment, lecturer's receptivity, online teaching, and ICT facility and support. Hence, medical schools should prepare and train their medical lecturers with digital skills through a series of trainings/workshops to ensure the continuity of medical education delivery during and beyond the pandemic. However, this study has a number of limitations that must be taken into account. First, this study is limited to a single medical school; therefore, the findings should be interpreted within the context of the study, and any attempt to apply them to another context should be made with caution. Second, due to the nature of the reflective open-ended questions, the experience shared by participants is subjected to recall bias, which might compromise the quality of the collected data. Finally, this study utilised a single data collection method, thus it was confined to one data source that might compromise the credibility of qualitative data. Despite these limitations, this study has several strengths. First, the medical lecturers involved in this study represented a variety of subject disciplines, maximising the diversity of participants in order to enhance the credibility of the data. Second, the data collection was conducted during the beginning of the pandemic. Therefore, the findings reflect the real struggles faced by medical lecturers during the pandemic. Finally, the data analysis was performed based on the recommended qualitative analysis approach, especially the use of multiple analysts and interpreters during the coding and categorizing of the quality data. Considering all these limitations and strengths, a future study with a mixed-method study design is recommended to verify these findings.

CONCLUSION

The pandemic control measures had forced medical lecturers to embark on online education to ensure the continuity of medical education delivery. These challenges were related to students, lecturers, curriculum, ICT facility, and technical support. Regardless of the the challenges, medical lecturers are committed and working hard to find ways to meet the demand and manoeuvre education approaches to meet the pandemic challenges. Several recommendations for improving medical education delivery during a pandemic were discussed, including ICT support, assessment, teaching, student engagement, and future research.

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