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Teaching Medicine Online During the COVID-19 Pandemic: A Malaysian Perspective

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Abstract:

The COVID-19 pandemic affected institution of higher learning as some teaching and learning activities had to halt due to safety of the students and staff. Face to face teaching was stopped, and lecturers had to find other methods of teaching. Online teaching was the only allowed method. The methods were synchronous and asynchronous. Lecturers have had to find innovative ways to practice effective teaching methods. Assessments had to also be done online taking important factors into consideration, following steps given by authorities. This article discusses issues around medical teaching during the COVID-19 pandemic

Keywords: COVID-19, medical education, online teaching

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Introduction

Clinical teaching is core to teaching medicine. Good clinical teaching is about highlighting and showing good practices to trainees, which is the basis of good professionalism in medicine.¹ Among the students' needs from this type of teaching includes increasing responsibility, regular observation of their work, opportunities to practice problem solving skills, and attending to patients.² Teaching activities include bedside teaching, outpatient clinics teaching, tutorials, and surgical skill hands-on in operation theatres (OT). It is not just limited to the teachings near a patient but includes lectures, seminars and clinical (intra-departmental and inter-departmental) meetings.³

The COVID-19 pandemic has caused worldwide disruptions not only to the healthcare system but also to medical education.^{4,5} Not only students, but the public as a whole has had travelling restrictions. Institutions of higher learning stopped operations

physically but activities mainly commenced online. This poses as a challenge as clinical teachings needed students to be in the healthcare setting which is deemed as very high risk.

Worldwide, many schools of medicine had to halt their clinical teachings and assessments.^{6,7} In the UK, some teaching hospitals that have had reports of COVID-19 cases has suspended teaching and clinical attachments.⁶ In the US, a minimum two-week halt on clinical teaching activities was recommended by the American Association of Medical Colleges (AAMC).^{8,9} In Australia and New Zealand, most medical schools converted to online teaching in the last 2 weeks of March of 2020.¹⁰ Meanwhile in Singapore, it was full lockdown and complete cessation of activities were imposed in April 2020.¹¹ Apart from seeing the pandemic as a threat to the health of the student, there is also the concern of students being the carrier of the virus.⁴ The government of Malaysia suspended all activities

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in its institute of higher education. While this kept the public safe from the spread of the pandemic; the crucial issue of continuing education had to be addressed.

This article discusses on how some of the public universities teaching medicine in Malaysia overcame this teaching challenge. Learning points from this experience will also help better prepare medical educators in facing future challenges similar to this. Adaptations to the new norms not only involve the daily routine of the public but also amongst the medical teachers.

Online Teaching Platforms

Both lecturers and the students needed to adapt with the new normal of using available tools on the internet for the continuation of education.¹² Popular platforms or software that were frequently used were Zoom[®], WebEx[®], Microsoft Teams[®] and Google Meet[®] as these were provided free of charge. For example, Zoom[®] has forgone their time limit so that the users can use the Zoom[®] application widely. But these also have their own limitations in view of vast usage around the world as the whole world are being lock down due to COVID-19 pandemic.

Methods of Online Teaching

Methods of online teaching and learning were largely divided into two which are synchronous and asynchronous teaching. Synchronous teaching or classroom is where the lecturer teach and communicate with the students in real time online using various video conference application while asynchronous teaching or classroom is where the lecturers recorded their lectures or set up task and assignments for students to complete at specified time and it is not in real time basis. These two methods also have their own limitation which is mainly due to internet availability and connectivity.^{13,14}

Pre-Clinical Teaching

For pre-clinical teaching that usually does not involve a lot of patient interaction, online teaching posed as a lesser challenge. Many universities have evolved into eliminating lectures and using technology to replace face-to-face interaction. They have moved towards promoting individualized teaching and enhancing inter-professional education.¹⁵⁻¹⁶

The major bulk of pre-clinical subjects are able to be conducted by various platforms mostly through online, distance or electronic learning without the face to face method. Subjects such as physiology,

pharmacology, biochemistry can be taught via multiple platforms. Most of the skills needed for these subjects, according to Miller's pyramid¹⁷, are up to understanding the concepts. Hence, the need for face-to-face interaction is not as essential. However, for universities that have incorporated clinical skills in the pre-clinical subjects, teaching these skills can only be done in theory first through the online methods talked about earlier.

Clinical Teaching

It can be argued that the most impactful session in teaching medicine is during the clinical years. This is the period where the students need and spend most of their time in in the clinical setting.³ This is the time where skills in taking history, performing physical examination, making important decisions, and doing clinical reasoning are taught and learnt.¹⁸ According to the Miller's pyramid¹⁷, at this level, they need to be able to show and demonstrate their knowledge and skills.

The following issues are commonly encountered during the pandemic as face-to-face sessions are not allowed:

- a- no clinical exposure (unable to see around in hospitals and wards- important form of learning (through experience and observation)
- b- no bedside teaching (unable to see patients' problems in real life)
- c- no hands on for physical examination
- d- no hands on for history taking
- e- no hands on to do clinical procedures such as insert continuous bladder drainage (CBD) and intravenous (IV) cannula

Hence, all clinical sessions have since halted. Educators have had to make so with online platforms that has clinical case scenarios to help paint a picture of the clinical settings. Apart from that several videos demonstrating communication and clinical skills have been used. The videos are also used for discussion among the students.

Other methods include lecturers being simulated patients or training someone else to be the simulated patient to teach history taking. Some lecturers have encouraged practicing with relatives and family members (with consent). Students are reminded that this only theory, they would still need to do the clinical examinations and hands on sessions later.

The above strategies are some of the examples

which are done as much as possible to mimic the clinical cases they should encounter during their ward rounds and clinical works. Some have reported similarly on the modified approach in teaching clinical years students.¹⁹⁻²¹ Again, the effectiveness is not comparable to the bedside teaching and the actual works in the hospitals and clinic. No doubt the best way of teaching is still through the conventional classroom where teachers are available to deliver the subjects in a 4-dimension utilizing all the sensoria maximally to grasp and instill the knowledge and skill effectively. However, teaching medicine has to be modified as social distancing is the cornerstone to combat the pandemic.²¹

Online Assessment

Assessment of students are also affected by the pandemic. Institutions with stable Learning Management System (LMS) or Virtual Learning Environment (VLE) can conduct their assessment using online method. However, due to internet connectivity and stability, most need to be done using the asynchronous method. The options given by the ministry were either open book open web (OBOW) test or continuous assessment as final marks. For OBOW, students were given questions and needed to complete the examination within a stipulated time. In contrast, for the continuous assessment method, the lecturer can conduct multiple mini assessments and assignments for the student to complete. A total of all the marks from the continuous assessment exercises will determine the final marks. Both approaches still depend on the internet connectivity from both lecturers and students.

The Malaysian Medical Council (MMC) made a statement that for the medical education circular saying that online teaching, learning and assessment for preclinical years was to continue. However, for the clinical years, only the theoretical component of the posting can be taught and assessed online.

All the clinical procedures, clerking and physical examination, laboratory skills were unable to continue as no face-to-face method was allowed. Most of the medical schools made a consensus that all clinical teaching learning and assessment that needed face-to-face methods were to be postponed until the Movement Control Order (MCO) ends.

Some institution tried to use simulation software to cover the clinical component of the respective posting, such as creating a scenario for the students

to attempt with relevant pictures of the cases shown. Unfortunately, it was concluded it cannot replace the authenticity and the practicality of actual face-to-face clinical teaching. The MMC stated that if the MCO extended beyond the required time limit to move up one year i.e. from third year to fourth year and the clinical components could not be adequately assessed at the end of third year, the students should be given conditional pass status and need to undergo a clinical examination in the following year (fourth year) when the COVID-19 pandemic subsided. This poses the argument where the students need to revise the previous year's syllabus while acquiring the current syllabus. This may likely be burden for the students.^{4,6}

Problems Faced

Internet connection has been one of the main issues in Malaysia. Despite the penetration in Malaysia is at 87.4%¹⁵, lecturers and students still face the internet stability issue. This may be due to most Malaysians being online during the MCO placed by the government during March-June of 2020. The Malaysian government however made initiatives such as providing free 1GB of data for usage during office hours. This whole experience become a steep learning curve for lecturers in preparing online teaching materials and conducting online classes. Apart from that, lecturers usually lacked technical support teams and had to make do with personal contacts to overcome their problems. In view of this, the time for each class was likely prolonged.

Lack of infrastructure and equipment available to conduct online class effectively was also an issue. As only essential premises were opened during the MCO, the only to obtain equipment were online shopping. Buying online also has its own challenges, for example delivery of the purchased items will take longer to arrive due to the limited number of postal workers and the availability of the products. Closure of factories around the world due to the pandemic was one of the causes to lack of equipment.

Other problems that occurred due to the limited number of available computers, tablets and mobiles phone per family. Many needed to take turns for online learning. Hence for this situation, asynchronous teaching learning method was usually preferred.

New Challenges

With all the above mentioned happening, mental health issues are bound to appear. Social distancing will affect especially the extrovert students that need to interact with others daily. Apart from that, inability for face-to-face teaching can also lead to uncertainty among the lecturers on how much the students grasp the knowledge taught. The lack of face-to-face interaction may be stressors leading to inability to cope among students. Due to students being in their own homes, some may shut down from the network of fellow students causing increase risk for mental health problems. Being secluded from campus surroundings and colleagues also makes it to get adequate professional assistance for mental illness especially during the initial part of the MCO.²²

Conclusion

The COVID-19 pandemic brought a halt to clinical hands on teaching due to safety reasons. However, teaching still had to commence. With the use of modern technology, medical lecturers had to quickly adapt to online teaching methods along with its technical issues. The challenges are more to clinical

versus the non-clinical (pre-clerkship) sessions. However, much effort was made in order to prepare students for the clinical teaching, which is due to commence at a later, safer stage. The same goes for online assessments.

This pandemic has taught medical lecturers to adapt to changes and optimize the use of technology, hence not blocking completely the process of teaching and learning. However, more support need to be given by institutes of higher learning such as technical and mental health support.

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