

COMMENTARY

Hybrid Objective Structured Clinical Examination (OSCE) for Preclinical Medical Students in UPM: A Lesson Learnt from COVID-19 Pandemic

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ABSTRACT

The global lockdown caused by the COVID-19 pandemic in 2020 necessitated several modifications for objective structured clinical examination (OSCE) to be conducted virtually. Since the reopening of higher institutions post COVID-19 in the year 2022, the teaching and learning methods at Universiti Putra Malaysia (UPM) have reverted to either face-to-face or hybrid modes. Nevertheless, there were circumstances where an adaptation of the virtual OSCE method for a hybrid session had to be arranged, specifically for students who could not physically attend the examination. Therefore, in this commentary, we aim to share the experience of conducting a hybrid OSCE session for preclinical medical students at UPM. It also summarises the advantages and challenges faced by the students, examiners and examination committee, as well as future recommendations, should a similar situation arises in the future.

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INTRODUCTION

In 2020, the COVID-19 pandemic impacted the whole world and prompted the majority of the countries to go into lockdown [1]. The Malaysian government implemented the movement control order (MCO) starting March 18, 2020 in response to the emergency pandemic threat declared by the World Health Organization (WHO). The MCO forced all non-essential sectors in Malaysia, including higher education institutions to physically shut down all their premises and operate from home [2]. This decision caused all teaching and learning activities in UPM to switch almost instantaneously to remote online learning [3]. For the preclinical medical students in UPM, several modifications were made to suit the conduct of online lectures, practical, assessments and examinations to ensure the course outcome and learning objectives were achieved [4, 5].

Objective structured clinical examination (OSCE) is a type of assessment tool used in medical programmes

to assess clinical skills such as history taking, data interpretation and physical examination of the students. Typically, each clinical skill is physically assessed by trained examiners using a standardised scoring checklist. Students are required to perform specific clinical tasks within the allocated time at specific stations that run concurrently in a circuit [6]. Implementing modified clinical examinations such as OSCE remotely during the pandemic was challenging due to limited experience in virtual distance teaching and learning. Several literatures from other institutions reported that the modifications were made involving synchronous OSCE sessions using video conferencing platforms. For example, Universiti Tunku Abdul Rahman (UTAR) in Malaysia and the University of Sharjah in United Arab Emirates conducted their remote OSCE using Microsoft Teams with multiple breakout rooms. To ensure its integrity, the students had to demonstrate that there were no unauthorized materials within their area through the camera [7, 8]. Similarly, Queen Mary University of London in the United Kingdom undertook virtual OSCE via Microsoft

Teams. Interestingly, any physical paperwork required by students during the exams, such as patient notes or drug chart were posted in a security sealed envelope to the students prior to the examination. During the virtual OSCE, students were then prompted to open the paperwork and the instructions were displayed to the students via invigilators sharing their screens [9]. In UPM, administering OSCE was one of the challenges that was faced due to the restrictions imposed during the MCO [5]. Several modifications to the examination were carried out during the final examination of preclinical medical students at UPM, which include [5]:

- a) Video OSCE, where students were required to record themselves performing a task, such as a physical examination, within a stipulated time and immediately submit their video to a dedicated Google classroom.
- b) Written OSCE using an online examination platform, i.e., Testmoz. For this type of modification, the format of the question was prepared in a similar manner to short-answer questions. Students were required to list down the techniques/steps to perform physical examination or history taking and submit their written answers in the prepared online examination platform within the stipulated time frame dedicated for the station.
- c) Virtual interactive sessions with examiners and/or simulated patients using an online meeting platform, i.e., Zoom. This modification has allowed for the simulation of a face-to-face OSCE session, where an online video conference platform with multiple break-out rooms was employed to transfer the students from one break-out room to the other, mimicking their movement in the physical OSCE circuit. The instructions for students were projected on the computer screen throughout the examination.

Since the reopening of higher education institutions post COVID-19 pandemic era, most of the teaching and assessments have reverted to either face-to-face or hybrid (a combination of online and face-to-face) modes. A proper plan and effective measures were outlined where students and faculty were prepared and supported to meet the learning needs to catch-up after the pandemic. Backup plans were delineated in our faculty in case of unprecedented events. As anticipated, there were circumstances where the adaptation of the remote online OSCE method for a hybrid session was necessitated. Fortunately, the insights gained from our experience in conducting remote OSCE amidst the pandemic have propelled us towards the introduction of hybrid OSCE whenever the situation calls for it. Thus, in this commentary, we would like to share the experience, advantages and challenges of conducting hybrid OSCE sessions for preclinical medical students in UPM from various perspectives and provide recommendations for future reference.

ADAPTATION FOR HYBRID OSCE IN UPM POST COVID-19 PANDEMIC

The first incident that triggered the decision to adopt this method was when a student tested positive for COVID-19 during the last day of the first semester of Year 2 resit examination in 2022. The second incident took place during the subsequent second semester of Year 2 final examination due to a medical emergency, where a student had to attend to his terminally ill mother in a hospital. In both situations, the students were unable to physically attend the examination, which prompted immediate approval and action from the examination committee and the Deputy Dean of Academic (Medicine) to implement the remote online OSCE method for a hybrid session. At this time, all examinations were already conducted face-to-face, following a similar setting before the pandemic.

Due to the above situations, a special arrangement was made specifically for the affected students where they were allowed to sit for the examination remotely through Google Meet (a virtual interactive OSCE session). The physical OSCE ran as usual; however, a lecturer was assigned to physically replace the student by going to each station in the designated circuit while carrying a laptop/tablet to simulate the student's presence. All information and questions were screen-shared, and the students who sat for virtual interactive OSCE session were assessed and/or marked by trained examiners using the same scoring checklist prepared for the face-to-face OSCE (Figure 1). The students were allowed to interact with simulated patient, answer all questions asked by the examiner, and ;

- conduct an interview for history taking-type questions, or
- interpret the provided data for data interpretation-type questions, or
- show the proper technique or specific skill that was performed on themselves with running commentary for physical examination-type questions.

For written or unmanned stations, all relevant information and questions were uploaded onto Testmoz. Students were required to answer all questions within the allotted time frame, followed by an online submission once finished. The question bank coordinator was responsible for preparing all online documents and was in charge of this setup to ensure a smooth run and a successful hybrid examination. Therefore, in both aforementioned examinations, the students who underwent online OSCE were able to sit for their exam at the same time as their friends who attended the examination physically.

HYBRID OSCE: THE OPPORTUNITIES, CHALLENGES AND RECOMMENDATION

This adaptation has offered several advantages to both students and the examination committee. First, it provides flexibility where students could be assessed



Figure 1 : The photographs of online OSCE conducted during a hybrid OSCE. This setup allows the student to interact with simulated patient and perform the clinical tasks while being assessed by the examiner. The examiners were also involved in assessing other students who sat for the face-to-face OSCE examination.

remotely via reliable online platforms (i.e. Testmoz and/or GoogleMeet) and an opportunity for the assessment to be carried out in time as scheduled. We also found that this setup has helped to reduce the workload, human resources, logistics arrangements, and administrative burden for coordinators and examiners, whereby preparation of a different set of questions and examination hall setting (to just accommodate one student's needs) could be avoided. Apart from that, this arrangement also benefited the students as it helped to reduce the emotional burden such that no replacement examination is warranted, and they could have their examination results on the same day, together with their batchmates. Most importantly, this hybrid setup was appropriate and possible to assess the students' communication and data interpretation skills.

Although the students agreed that this hybrid setup was student-friendly, and the examiners also found that this adaptation was accommodating to meet different students' needs; however, there were a few drawbacks and improvements that should be considered following all feedback from the examiners and students. One of the most significant challenges of the remote online OSCE was conducting a physical examination on a simulated patient. The online meeting platform only permits verbal communication and visual recognition, therefore specific skills, such as auscultation of the

heart or palpation, are impossible to perform in the absence of a simulated patient as the student could only describe and explain the technique. As a result, examiners thought that this limitation may affect the accuracy of their judgement in assessing the students. Fortunately, the physical examination of hybrid OSCE that was conducted for both students did not require a simulated patient, as they could examine themselves to demonstrate the acquired skills and knowledge. Apart from that, the students also suggested that additional answering time should be permitted for unmanned/written OSCE stations as they might take a longer time to type than to write.

A significant issue related to online examination is internet connectivity. For students residing in rural areas, attending OSCE online can be particularly challenging. In a previous study, it was found that medical students experienced anxiety when participating in an online examination. This was primarily attributed to their struggles in adapting to the online platform and concerns regarding the fairness of online assessments [10]. Similar issues were previously observed at UPM as well [4]. The presence of effective administrative support plays a pivotal role in guaranteeing the smooth execution of hybrid assessments. Our students are already familiar with the Google Meet and Testmoz platforms from prior teaching and learning activities. Additionally, students may be granted extra time to complete the examination if they face unstable internet connections. The examination committee also ensures that the examination procedures and grading are equitable for students participating in-person or online.

When implementing a hybrid session for clinical examination, such as OSCE, it is very critical to ensure the fairness, security and effectiveness of the examination process. Adequate training and technical assistance provided by the university to all examiners who will be assessing students virtually is pivotal. A continuous evaluation of the remote online examination process based on the comments from students, coordinators, and examiners can help to improve the hybrid examination setup and enhance its validity and effectiveness. Our experience during MCO has made us familiar with the remote online examination setting and helped us to ensure a smooth and effective hybrid examination experience for medical students. On top of that, a comprehensive guideline for students, coordinators, and examiners regarding the format of hybrid clinical examinations should be developed to serve as a guide should similar incidences arise in the near future. Nevertheless, it is hoped that this adaptation will provide an alternative for students and educators moving forward by integrating technology, cultivating a culture of digital innovation, and promoting flexible learning in medical education to ensure inclusivity for all students.

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