

COMMENTARY

Modifications of OSCE for UPM Preclinical Medical Students during COVID-19 Pandemic

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ABSTRACT

The social and physical restrictions in the early phase of COVID-19 pandemic had resulted in forced transition into virtual learning worldwide. Modifications of assessment tools also had to be made to suit online conduct. This article aims to share the experience of conducting online objective structured clinical examination (OSCE) using several approaches for preclinical medical students in one of the public universities in Malaysia. It summarises the challenges faced by the involved parties, as well as the solution and recommendation should similar situation arises in the future.

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INTRODUCTION

Objective structured clinical examination (OSCE) is a method to assess clinical skills and performance of medical students. It is designed to evaluate candidates objectively using the same clinical questions with trained examiners and standardised scoring tools (1). It is structured whereby candidates are required to perform a specific clinical task within the stipulated time at each station. The tasks may include history taking, counselling, data interpretation and performing physical examination or procedure (2). The stations are run concurrently and depending on the number of candidates, more than one circuit and session may be required.

COVID-19 AND UPM PRECLINICAL MEDICAL TEACHING & LEARNING

Malaysia had imposed a nationwide Movement Control Order (MCO) on the 18th March 2020 following the

declaration of COVID-19 as global pandemic. All non-essential sector activities had to be carried out from home including the teaching and learning (T&L) of higher education centres (3). Transition to remote online T&L took place almost immediately including the preclinical medical programme in Universiti Putra Malaysia (UPM). Modification of practical, student centred learning, problem-based learning and early clinical exposure (ECE) sessions was carried out to suit online teaching. Students' assessments were also affected by the unprecedented and unpredictable COVID-19 situation. Following discussion at the administrative level, UPM had decided to proceed with the scheduled assessments using online platforms.

Conducting an online clinical examination including OSCE is not as straightforward as the other online written assessments. OSCE mainly assesses communication, clinical skills and competency apart from knowledge, hence it is best carried out physically and face-to-face (2). Due to the restrictions adhering to MCO and limitations in students' clinical T&L experience, several modifications of OSCE for online set-up were carried out for the preclinical medical students in UPM during 2020/2021 academic session.

MODIFICATION OF OSCE IN UPM PRECLINICAL MEDICAL ASSESSMENT

Written OSCE

Instead of performing a task, OSCE was modified into a written format and conducted using an online examination platform. The OSCE questions were prepared as short answer questions with relevant clinical scenarios and candidates were required to answer by providing a list of step-by-step descriptions. The answer scheme was tailored to evaluate students' performance solely based on their written answers, hence no communication skill was assessed. They were also not penalised on the use of language.

This modified OSCE format enables evaluation of knowledge on how to take history, perform physical examination or procedure and interpret data to fulfil the module learning outcomes. However, the assessment of 'show-how' clinical competency was limited (4). For each online written OSCE, the candidates were given extra five minutes considering that they have to type in their answers rather than verbally communicating or physically showing how the tasks were carried out.

Video OSCE

In video OSCE, the candidates were required to record themselves performing physical examinations or basic clinical procedures. The video recording was either done as an assignment or synchronous online examination and the length should be within the specified duration allowed. Candidates had to provide a running commentary while performing physical examination or clinical procedure and submit the video to a designated Google classroom. They were exposed and had prior experience of video recording and submission in similar manner during their online ECE classes.

Since the students were at home or college, they were allowed to use any suitable items to conduct and complete the tasks. For physical examination, they might ask a family member or friend to become their simulated patient. Students without suitable candidates were allowed to use a teddy bear or make their own patient using various creativity, as long as they were able to demonstrate the performance of skills. For basic clinical procedure, the OSCE question on proper hand washing demonstration was selected for the Year 2 End of Semester Examination. It was conducted as synchronous online examination using a video conference platform and candidates were given 30-60 minutes to submit their videos. A longer duration (24-48 hours) was allowed for video submission if the video OSCE was given as an assignment. Video OSCE has allowed the assessment of physical examination techniques with limited verbal and non-verbal communication skills.

Remote online (interactive) OSCE

Remote online OSCE enables assessment of students' performance via virtual interactive sessions. Online video conference platform with multiple break-out rooms which mimic physical OSCE stations was employed (Figure 1). Students were transferred to different break-out rooms to move them from one station to another. The examiners and simulated patients remained in the same break-out room while the instructions for candidates were shared on the computer screen throughout the examination. The time for students to perform their tasks were maintained, similar to the face-to-face OSCE. Virtual interactive OSCE however, was limited to assessing history taking, data interpretation and communication skills only.

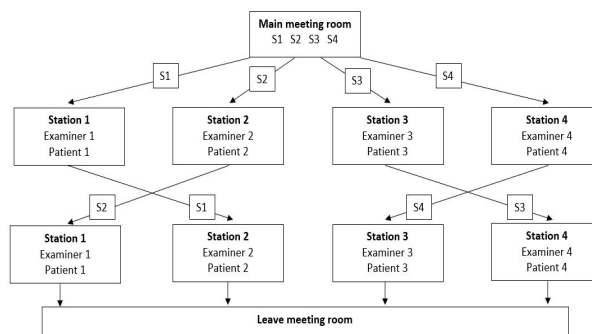


Figure 1: Illustration of interactive OSCE break-out rooms and flow. This model involves 4 break-out rooms and two OSCE questions. Station 1 and 3, and station 2 and 4 are the same questions, respectively. A host is responsible to transfer the students to the first station and later to the second station. The examiners and patients remain in the break-out rooms throughout the session. Subsequent group of four students will enter the meeting room once the current group has left. Multiple meeting rooms can run concurrently and the number of groups and meeting rooms depends on the total number of candidates. As quarantine is impossible with online examinations, several sets of OSCE questions may be needed if there are many groups to ensure confidentiality and fairness. S1-4: Student 1- Student 4.

The number of questions, students and available human resources determine the time and circuits required to run a remote online OSCE. Apart from that, quarantine is also not feasible for remote online examination. Should more than one circuit be needed, extra precautionary steps are necessary to ensure security and fairness of the examination. For the Professional I Examination, different sets of OSCE questions for different circuits were prepared. In order to assess the same learning outcome, different sets of questions tested on similar tasks from the same topic were asked. The differences were in the form of clinical scenario and/or data provided in the instruction to students.

CHALLENGES

· **Administrative**

Several administrative efforts and changes were required to carry out modified OSCE during the COVID-19 pandemic:

- a. Amendment of OSCE questions for online set-up while at the same time attempting to fulfil the learning outcomes and stick to the original examination blueprint.
- b. Exploring available and suitable online platforms and set-up of OSCE.
- c. Preparing suitable venues for conducting: (i) centralised interactive OSCE where the examiners and simulated patients were in one place; and (ii) centralised invigilation for written and video OSCE. The most suitable venue identified was the computer laboratory in the faculty.
- d. Ensuring the validity, reliability, security and fairness of the OSCE questions and examination.
- e. Addressing the hesitancy of students, examiners, invigilators and simulated patients venturing into new methods of examination.
- f. Holding a briefing and full trial run of everyone involved (hosts, examiners, simulated patients and students) with the modified OSCE prior to real examination.
- g. Trouble-shooting problems encountered during trial run and improving subsequent OSCE conduct based on modified OSCE experience.

· **Students**

Although the students were familiar with online platforms during virtual T&L and end of module assessments, there were several issues that had to be properly addressed prior to the final examinations (End of Semester and Professional I):

- a. Getting familiar with modified OSCE delivery and conduct. Mock OSCE sessions helped students to beat anxiousness and minimise their uncertainties of the OSCE flow and expectation.
- b. Preparing suitable devices with functioning microphone and camera for interactive OSCE or video recording with clear audio-visual quality and stable internet connection.
- c. Learning additional IT skills such as operating online platforms, recording videos, converting files

and submitting or sharing files and links.

- d. Preparing relevant items at home to perform OSCE tasks such as hand sanitiser and suitable simulated patients for physical examination.

· **Simulated Patients (SP)**

Simulated patients (SP) were only involved in interactive OSCE for history taking questions. This was to minimise the number of people in the computer laboratory as there were also presence of examiners and technical staff during the examination. The challenges for SP include getting familiar with the devices, online platform and modified OSCE conduct. They also had to know and act for more than one scenario as several sets of questions were used during interactive OSCE

SOLUTION AND RECOMMENDATION

Apart from the availability of a more stable internet connection and backup devices, a centralised invigilation preferably in the faculty computer laboratory is recommended for easier control of the OSCE flow and better management of unexpected situations. Adequate training of the invigilators is essential as they are the responsible personnel who communicate with the students and identify any potential issue during examination. Mock OSCE sessions involving the meeting hosts, students, examiners, invigilators and SPs were very helpful to ensure a smooth OSCE conduct, identify hiccups and troubleshoot problems prior to the real examination.

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