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Ensuring Continuity of Undergraduate Clinical Pharmacy Teaching and Learning Activities During Crisis

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ABSTRACT

This commentary briefly discusses alternative teaching-learning (TL) activities and student assessment methods during COVID-19 movement control order (MCO) for undergraduate clinical pharmacy courses in Bachelor of Pharmacy programme at University of Cyberjaya, Malaysia. A variety of online TL and assessment activities were planned and undertaken in accordance to standard guidelines and course learning outcomes of clinical pharmacy courses for the period between 18 March 2020 to 28 April 2020. Selected online TL which include pre-recorded lectures, live stream lectures, virtual hospital simulation and hospital attachment were implemented. Various online assignments were used to replace face-to-face practical exams and pharmacy objective structured clinical examination (OSCE). An online survey to students was conducted and found that internet speed, connectivity and coverage were the main challenges faced by students in undertaking online learning. Digital education is the mainstream of medical education in this millennial especially when facing crisis. High speed and good internet coverage are therefore essential in ensuring effective online TL delivery and assessments to all students and educators.

Keywords: *Crisis, Online learning, Online assessment*

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The importance of systematic planning and training of online teaching and its implementation in medical education cannot be denied, stagnate, reversed nor delayed and it has been timely addressed in a recent publication in JAMA this year *The Inevitable Reimagining of Medical Education* (1). Since the first confirmed corona virus disease 2019 (COVID-19) case in Malaysia was reported on the 25 January 2020 with the subsequent increase in number of cases in February 2020 onwards, the University of Cyberjaya also taken the decision to fully implement online teaching-learning (TL) activities to ensure continuity of learning. The immediate measure was taken to help reducing the spread of COVID-19 infections and in view of possible movement control order (MCO) or lockdown. Prior to the implementation, series of training were conducted to ensure readiness and efficiency in implementing the online learning. The trainings include Learning Management System using Moodle® as the primary learning platform for the university and an alternative online teaching

platform, the Microsoft Teams. With the first announcement of MCO by the Malaysian Prime Minister to be started on the 18 March 2020, University of Cyberjaya was indeed on the right track with its implementation of online learning for all students. Who would have thought that this unprecedented crisis has actually pushes our technology boundaries and caused steep learning curve to all academicians to be fast technology learner and user, adaptable, creative, and more compassionate to our own unexplored capabilities.

For pharmacy education, the undergraduate Bachelor of Pharmacy (BPharm) programme is governed by the Malaysia Pharmacy Board. The Board had released its sets of teaching, learning and assessment guides during the COVID-19 crisis (2) which is parallel with the Ministry of Higher Education circulation guide on the conduction of academic programme for public and private universities (3). For the Faculty of Pharmacy of University of Cyberjaya, to ensure continuity of pharmacy education to its students where these guidelines must be adhered without omitting the minimum standard for undergraduate pharmacy programme (4), alternative teaching (Table 1) and assessment (Table 2) activities were planned and implemented during the COVID-19 MCO period.

Table 1: Alternative teaching and learning activities during COVID-19 MCO

Original activity	Alternative activity	Supporting tools/ platform	Comments
Lecture	Live stream lecture/ pre- recorded lecture	Power Point/Moodle	1. Students can ask questions using Teams chatting or email 2. Lecturers provided timely formative feedback in response to any queries.
Case studies presentation	Audio-recorded presentation	Power Point/Moodle	Students submitted audio-recorded presentation and formative feedbacks were provided by lecturers.
Interprofessional case-based learning (BPharm and BHMS students)	Virtual classroom case-based learning discussion	Microsoft Teams	Lecturers were in the virtual classroom as facilitators and formative feedbacks were provided.
Hospital simulation	Virtual hospital simulation	1. Microsoft OneNote Class Notebook as individualised simulated patient medical record 2. Microsoft Team as a live streaming meeting for clinical teaching rounds	This exercise was conducted for one week where multiple live clinical teaching sessions were allocated and formative feedbacks were provided.
Hospital attachment	Virtual hospital attachment	Simulated retrospective medical records covering multiple disciplines were uploaded in Moodle for a dedicated virtual ward setting.	1. This exercise was conducted for 2 weeks for 14 simulated patient medical records covering infectious diseases, surgery, paediatric, geriatrics and oncology. 2. Students contacted clinical lecturers through email or Teams chatting for any requested discussion and formative feedbacks were provided.

Notes: **BPharm**: Bachelor of Pharmacy, **BHMS**: Bachelor of Homeopathy and Medical Sciences

There were challenges worth mentioning while conducting online teaching activities. During the first week of conducting virtual hospital simulation (Table 1), a survey was sent to all pharmacy students for feedbacks. Only a small percentage of pharmacy students actually left staying around Cyberjaya while majority managed to stay at their own homes all over Malaysia. This happened because mid-semester break occurred before the MCO starts. Of all the 134 students who responded to the survey, majority of the students (72.4%) used only their personal computers such as laptops or desktops for the online learning. More than 60% of students agreed that their internet coverage and speed were good. Almost 70% of the students reported having no issues in accessing the online learning materials. However, it was also found that almost half of the students (41.8%) were not comfortable learning using the online platforms. This could be due to poor internet speed, connectivity or coverage for some of the students especially during live stream lectures or discussions. This could also be due to the fact that online learning has never been fully implement among students and some were still getting used to learning via online platforms. It is very important to safeguard effective and fun learning especially during MCO where students may easily get frustrated and depressed because of limited social and physical interaction.

With this students' feedback, live stream lectures or discussions with students were not subsequently implemented. Simulated retrospective medical records were used and uploaded instead to conduct the subsequent virtual hospital attachment (Table 1). Students were allowed to have access to the simulated medical records at any time convenient to them or they have good internet coverage. Through this method, students were hoped to complete their tasks and able to learn at their own pace but still within the stipulated time. The simulated retrospective medical records contain complete sets of individual patient's bed head ticket or medical records including admission clerking, clinical progress notes from clinicians, nurses, dietitian, and pharmacists, laboratory results, vital signs and medication charts. Continuous formative feedbacks from lecturers for all online teaching and learning activities are imperative to maintain interactive online communication of teaching materials and to ensure learning takes place among students.

Continuous assessments for face-to-face case presentation, practical exam and pharmacy OSCE were replaced with online assignments (Table 2). The selected online assignments were matched against course learning outcome domains. Students were instructed to prepare audio-recorded presentation and counselling videos in response to case scenarios to assess the cognitive and affective domains. The students were asked to produce the presentation and video for a maximum of 10 to 15 minutes duration. Reflective writing was used to capture affective domain in which students were instructed to respond to cases involving ethical issues. Through this reflective writing, students' insights and perspectives on ethical issues and empathy were able to be assessed. We adopted and adapted REFLECT rubric for reflective writing assessment (5). Without a proper facilities and standard tools, psychomotor domain can be quite challenging for students to undertake illustration examination at their own home. However, in pharmacy practice, good documentation is also as important as being a good clinical pharmacist. Hence, illustration of a standard hospital documentation for a specific task relating to a given clinical case scenario can be done online.

All online assignments must have a very clear instruction for students to undertake and submit it successfully. A period of three to seven days were allocated to students to do the online assignments (Table 2). Submission day was given for a period of 24-hours for students to upload their finished tasks after the completion

Table 2: Alternative summative continuous assessments during COVID-19 MCO

Original assessment	Alternative assessment/ online assignments	Domains covered*	Completion period	Assessment tool	Supporting tools/platform
Case presentation	Audio-recorded case presentation	Cognitive	1 week	Rubric	Power Point/ Moodle
Practical exam	Online quiz	Cognitive	1 day	MCQ	Moodle Quiz
	Counselling video for a specific case scenario	Affective	1 week	Rubric	Video recording using smartphone/ Moodle
Pharmacy OSCE	Reflective writing for a specific case scenario	Affective	3 days	Rubric	Word document/ Moodle
	Simplified patient medical record to find pharmaceutical care issues	Cognitive		Answer scheme with marks	Word document/ Moodle
	Documentation in Drug Information Centre setting for a given scenario with standard tools used in hospital	Psychomotor		Answer scheme with marks	Word document/ Moodle

Note: OSCE-Objective Structured Clinical Examination
*According to course learning outcome

period. There were few students who had problems in submitting online assignments to a standard Moodle platform because of poor internet coverage. This issue was being treated case by case basis where these students can send their submission using shared online drive either through Microsoft or Google Drive.

Through all this new atmosphere of online TL and assessment activities in medical education during crisis, the mind set of students as the end user may not be initially adapted due to the sudden change of learning environment. This may be true especially if majority of the TL activities are still being conducted using conventional methods. However, rest assured, the millennials generation is a fast technology learner generation and will eventually acclimatised quickly provided that the support system is in place. All the undertaken teaching and assessment alternatives (Tables 1 and 2) will be further refined in the near future through appropriate research and are subjected to continuous quality improvement activities under the faculty. Many times, decision have to be made immediately with limited information and resources especially during crises. Make use of available learning resources to ensure all course learning outcomes can be met. Clear and concise instructions and reassurance to students are also pertinent to engage students in online learning and assessments during crises. In retrospect, high speed and unlimited internet coverage has now become essential to all students and teachers.

REFERENCES

1. Ezekiel JE. The inevitable reimagining of medical education. JAMA. 2020;323(12):1127–8. https://doi.org/10.1001/jama.2020.1227

2. Lembaga Farmasi Malaysia, Kementerian Kesihatan Malaysia. Panduan pengendalian program Ijazah Farmasi semasa dan pasca Perintah Kawalan Pergerakan COVID-19; 30 Mar 2020.

3. Kementerian Pengajian Tinggi. Kenyataan media: pengendalian program akademik di Universiti Awam (UA) dan Institusi Pendidikan Tinggi Swasta (IPTS); 29 Mar 2020. Available from: http://www.mohe.gov.my/en/media-mohe/press-statement/1031-pengendalian-program-akademik-di-universiti-awam-ua-dan-institusi-pendidikan-tinggi-swasta-ipts

4. Lembaga Farmasi Malaysia, Kementerian Kesihatan Malaysia. Standards on approval and recognition of pharmacy programme; 2018.

5. Wald HS, Borkan JM, Taylor JS, Anthony A, Reis SP. Fostering and evaluating reflective capacity in medical education: developing the REFLECT rubric for assessing reflective writing. Acad Med. 2012;87:41–50. https://doi.org/10.1097/ACM.0b013e31823b55fa