

# **Covid 19 And Its Impact On Medical Education: “Anniversary Reaction” From College Of Medicine And Health Sciences, National University, Oman**

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## **Abstract**

The COVID 19 pandemic had a tremendous impact on medical education all over the world. Oman and its universities were not an exemption to this. The review investigates how medical education has evolved at College of Medicine and Health Sciences, National University since the pandemic. Now with pandemic under control, and colleges reverting to normalcy the article provides insight into the challenges faced and how these were converted into opportunities by the faculty and administration at COMHS. The review addresses the challenges in the last one year and how COMHS, NU overcame them as a team.

## **Introduction**

WHO had announced COVID 19 as a pandemic in March 2020. All the colleges in the region were shut down. Colleges were under pressure finding an effective strategy to combat the difficult situation. Each university in the region had coped in its own way. Some colleges reacted immediately but many had resorted to a wait and watch approach. As a medical college it was a big challenge for COMHS to go ahead with the teaching learning activities. Both the faculty and students were asked stayed at home in the initial period.

The preclinical and clinical departments each had its own challenges during the lockdown. The hospitals were out of bounds for medical students. The hospitals themselves reported lower number of cases and the number of doctors who worked there were also halved. Most of them had been shifted to COVID wards and had duties related to COVID management. This was the background with which the COMHS team started their journey. The college reacted to the challenge immediately and converted it into an opportunity in an effective manner.

## **The crisis management team at COMHS, NU**

There were lot of uncertainties related to the pandemic. The duration of lockdown, the

intensity of the pandemic, the opening of clinics everything remained uncertain. But the dean of College of Medicine with its efficient team started their work immediately. There were many committees which were formed addressing different challenges brought in by the situation.

- The IT committee looked into the prospects of new software platforms for communication among the faculty and between the faculty and the students. They had the minimal time of two weeks within which they had come out with different options like webinar, webex, zoom etc among which webinar was chosen. The IT had also had training sessions for both the faculty and the students on how to go ahead with the TL activities with webinar.
- A committee was instituted to find the way ahead in terms of continuing with the academic program for the remaining batches. This committee came up with plans for the existing batches and the plan for the next academic year. The existing batches continued with online classes and the method of assessments were modified given the situation. Assignments were included as part of formative assessments and case-based assessments and MCQ formed the crux of the summative assessments.

- A subcommittee was instituted to evaluate all the online tools available for students to learn clinical skills, clinical decision making and communications skills. The committee met weekly and listed out the online tools available in the market with their pros and cons. The tool was investigated whether it covers all the clinical subjects which the student goes through from medicine to psychiatry. The committee also covered the Augmented Reality tools with an interactive software. The price was also included as an important factor in assessing the feasibility option. The committee had finally brought out a handbook of all these softwares which was distributed to all the faculty.
- Exam committee already an established committee at COMHS investigated the adaptations necessary during the COVID lockdown. New methods of evaluation like assignments were included as part of formative assessment. Summative assessment pattern also was modified accordingly. Online OSCE were introduced for the first time in COMHS. It was successful except in the realm of general examination and systemic examination for various clinical departments where it needed some modifications. The feedback from the students also encouraged the use of online OSCE in the clinical departments.
- WORTH every minute: "WORTH" - Weekly Online Resource Training Hub was started after discussion with the online teaching committee. This was a weekly session which provided a platform for the faculty to discuss the difficulties and innovations they had done during online teaching. This platform also had online sessions with a range of topics like 'student engagement online' which was addressed by the local faculty and speakers from different university shared their experiences and ideas in this platform. Since a complete online mode of teaching was totally sudden and new to the faculty this platform provided the necessary confidence for them.
- COVID 19 module: The COMHS team came together orchestrating one other important milestone in the history of COMHS. Every aspect of COVID was covered in a series of lecture starting from

microbiology to mental health aspects of COVID. The biggest challenge was adapting it within the existing curriculum, and this was managed professionally by the medical education department of COMHS, NU. All the clinical batches (MD5 and MD6) attended. "My COVID reflections" by the students was a highlight since the students came out with artistic rendering of their reflections on COVID. There was an assessment in the end followed by which the students were awarded a certificate.

### **Challenges faced by Preclinical departments**

The preclinical years in general had lectures, lab sessions, tutorials and PBL sessions. The laboratory sessions were not possible because of the lockdown. However, the lecture sessions could go on without major issues with webinars and WebEx. Features like breakout rooms were effectively used to divide bigger groups into smaller groups. The preclinical groups were bigger in number compared with the clinical groups. But the major challenge remained for the clinical department since the students were asked to remain at home.

### **Challenges Vs Opportunities: Clinical departments**

But the clinical departments faced tremendous amount of difficulty because the students were not permitted to attend the clinics. The lectures and seminars by students were not a problem. But clinical teaching remained one big challenge. This challenge was effectively converted into opportunity by the faculty of COMHS, NU. As mentioned early a committee was instituted with the main agenda of finding the best solution for clinical teaching in an online environment. The committee did arrive at many simulation software's, even with AR augmented facility. Though the committee stated that these were never equivalent to seeing real patient in the clinics or wards it was a need of the hour. The clinical cases in this simulation software did not cover all the clinical departments. It relied on more of medical and surgical specialties and the other branches were not addressed adequately.

By the time the committee came out with a comprehensive recommendation the clinical departments had to come up with alternatives to

facilitate clinical teaching. The following strategies were the ones which were followed.

**Simulated patients (SP):** One of the summative assessment methods for testing clinical skills of students in COMHS was OSCE. For the different OSCE stations the college trained simulated patients (SP) were available. These SP's were contacted and were used to facilitate clinical learning during the lockdown. The morning sessions comprised of clinical teaching with SP's and the afternoon sessions were lecture's and IDL's. The SP's were given the case scenario which were to be discussed the next day and the doubts clarified beforehand. The next day the SP's were also sent the link together with the students and joined the session. This was very useful since the students could learn and sharpen their history taking skills and communication skills. This experience was the closest to seeing the real patients according to student feedback. However, the general examination and systemic examination were still a problem which was addressed by the SIMU lab.

**Case based discussions:** Part of the formative assessments the final year clinical students must submit case write ups. These were cases seen in outpatient department and wards. These cases and others from the COMHS library resources were used in the morning sessions. The cases were read with the history and clinical findings and the students were asked to reason out what w the provisional and differential diagnosis were. Sometimes they were asked to go through the exercise as a group to come up with what sort of investigations they would do given the history and clinical exam findings. This strategy also enhanced the students clinical reasoning skills and was an immediate hit among the students.

**Video based discussions:** The library at National University was rich with resources which were effectively used by the faculty during the lockdown period. There were videos on examination of different systems like CNS, RS, CVS, and Abdomen. These were also used effectively used in the clinical sessions in the morning. Apart from these videos departments had used videos from YouTube for certain aspects of clinical teaching. Some department had reported of using video clippings from movies to show different aspects of clinical presentation. The department of psychiatry had

used this method extensively for teaching learning activities. Medical graduates of COMHS are expected to learn basic communication skills, breaking bad news, eliciting history and mental status examination as part of the curriculum. Psychiatric training at the college included mostly outpatient and inpatient case-based learning of these skills during the pre-covid era. However, during the COVID this was not possible, and we had used different methods for skill development as mentioned earlier. One of the methods used was using videos from the college library and edited clips from silver screen. The following were some of the movie clips both from Hollywood and Indian cinemas that were edited and used.

1. One who flew over the cuckoo's nest – Patient communication skills
2. As good as it gets – Signs and symptoms of obsessive-compulsive disorder
3. A beautiful mind – Signs and symptoms of schizophrenia
4. To the bones – Anorexia nervosa
5. Hichki – Signs and symptoms of Tourette's disorder
6. AAMC medportal – Videos on history taking and MSE in different psychiatric disorders

The student feedback implied that they benefitted learning through this method. Some of the disorders like Tourette's disorder, eating disorder and multiple personality disorders are rare syndromes difficult to see in day today OPD setup. Post covid these videos were used as a supplement to the theory topics discussed.

**Skill Lab:** A fully functional Skill Lab had come up at the right time with an experienced faculty working round the clock. This facility had the necessary equipment's, mannequins to cater to the needs of the clinical students. However, since students could not come to the lab recordings were made available to the students during the morning clinical session. Decisions were made to transmit the clinical examinations as a live telecast to the students.

Many groups had successfully completed their clinical postings with the above-mentioned methods. Feedbacks got from the students revealed that they had benefitted a lot from case-based discussions, SP and the others in this order.

The lectures in the afternoon and the student presentations went on as usual without any problems. The college had used platforms like WebEx and Webinars for the same in the last year. Both were good in facilitating small group interactions in the form of breakout rooms. The faculty had used all the wonderful options provided by these platforms. The attendance and the duration of each student's participation were provided after each session. The option of recording the sessions was particularly important since there were few student's low internet speeds in their locality. These recorded lectures were later uploaded in the LMS, and the students benefitted. The interactive lecture was of great use for the students and was not a big issue during the COVID situation like the clinical side.

### **The online assessments**

The college exam committee looked into the issues behind online assessments. The challenges in this area alone would be eligible for a separate review. However here the major issues which came about were the modifications in the assessment. One of the main issues was the students were going to give the assessment from home. Options were explored to provide a fair platform for the conduct of examinations. The committee was on the lookout for best clinical simulation software also provided with various options to monitor students during assessment. They had come out with many proctoring solutions some even with artificial intelligence facilitated algorithms to fix malpractice in the exams.

However, these needed more time and money which was not feasible at that time. So, the committee decided that the exam format needed modifications which would mitigate the malpractices and facilitate fair conduct of exams. The initial modifications came in the form of multiple question format. In the previous years the major format of questions was only Multiple Choice Questions. But now True/false, Match the following, fill in the blanks, short answer questions, video-based questions were included with time being the critical factor among all these.

Together with these bigger groups were divided into smaller groups and each small group had an invigilator who would monitor the exam through cameras. The same platforms

(Webex/webinars etc.) which was used for teaching were also used to monitor the progress of exams. The student would start the exam in the given time and would keep the cameras on and the invigilator would keep a watch on the group allotted to them. The clinical years had a group of approximately 20 so it was not a major issue. However, the preclinical years had around 140 students who had to be divided into smaller groups to be monitored.

New rules and regulations were circulated about the conduct of the examinations to the students. Except for the issues related to the internet the overall student satisfaction remained good related to the conduct of examinations.

### **Lessons from the pandemic**

There were lot of challenges in the teaching learning in the clinical and preclinical student groups. Each of these were turned into an opportunity by the COMHS team. There were some valuable experiences which we use even after the and students have started their regular courses.

### **Face to face Vs Online**

There were many faculty who had lot of ambivalence about online teaching before COVID 19. However, after the difficult situation was imposed on them there was no other go but rather to implement it in the best possible method. The faculty found out efficient methods to engage the students online apart from keeping the cameras on during the TL sessions. Given the situation that the COVID threat still looming and not gone completely this method is used in different ways efficiently.

Many of the large group meetings are conducted efficiently on the online platforms reducing the contact among the staff and the students. The COVID protocols and physical distancing still remain in practice and these online platforms remain a wonderful method to use in these situations.

### **The hybrid system**

Because the distancing in the classrooms being followed as Covid protocol a whole group of 150 to 180 cannot be accommodated in lecture halls. This issue was sorted out by the introduction of hybrid classes. Half of the group

attends the lecture face to face and the other half through the online platform. Though engaging both the groups remains a challenge this is the only feasible means through which both the issues could be addressed.

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