Teaching Aspects During The COVID-19 Pandemic

Pedagogiskt docenturarbete

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**Teaching aspect during the COVID-19 Pandemic:**

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**Abstract**

The COVID-19 pandemic affected teaching and learning activities, safety of the students and staff. Lecturers had to find other methods of teaching other than face to face teaching. Online teaching, assessments are more popular nowadays. This pedagogical reflection/analysis discusses issues around medical teaching alternatives and in particular issue related to course 7 medical education during the COVID-19 pandemic.

**Introduction**

In December 2019, a viral outbreak of pneumonia of unknown origin occurred in Wuhan, China. On 9 January 2020, the World Health Organization (WHO) officially announced the discovery of a novel coronavirus: SARS-CoV2 \(^1\). This new virus is the pathogen responsible for this infectious respiratory disease called COVID-19 (Coronavirus Disease). The worldwide disruptions caused by COVID-19 pandemic affect the healthcare system as well as the medical education \(^2\).

Medical education is related to the practice of being a medical practitioner. The initial training to become a physician include medical school and internship followed by the residency, fellowship and continuing medical education as additional training. The aim is to equip clinicians with the knowledge and skills to provide safe healthcare to patients. Shutting down the academic institutions, alongside the challenge imposed on health care systems worldwide during the pandemics, might affect the quantity and quality of medical education. Medical students are thus faced with risk of receiving inadequate education and being required to potentially serve in the frontlines as well \(^3\).

But, how can medical institution and students bridge the gaps created in their training, and ensure that they will continue to receive the knowledge and skills required to progress as competent and safe clinicians?

In this reflection/analysis, I attempt to elucidate the educational methods that can ensure continuity in the education of medical students with focus on our student in course 7 medical education program.

**Minimizing the Educational Gap**

The overall acceptance of digitally enhanced learning and teaching in higher education had grown over recent years. Its seems to be in the last two decades medical education has seen the extensive implementation of evidence-based teaching with the adaptation of new learning strategies supported by digital technology. According to 2013 European University Association (EUA) survey, practically all higher education institutions offered some kind of
digitally enhanced learning, and more than half offered or had planned online degree programmes (4). This type of learnings encouraged during the pandemics as it assist in decreasing the possibility of infection with COVID-19 virus. The important issue of medical education in dealing with this problem include: The maximum use of remote or decentralised modes of medical education delivery, maintaining the integrity of formative and summative assessments, Restructuring patient-contact components and the developing plans for maintenance of essential educational activities based on risk levels.

The vast majority of institutions indicate that they have plans even beyond the crisis to explore new ways of teaching (87%) and enhance digital capacity (70%) (EUA 2020) (3).

But, Autonomous learners may have coped well with working remotely, while students with learning difficulties may have been overwhelmed.

**Online learning**

Online medical teaching is increasingly utilized depending mostly on the concept of blended learning combining the use of video, asynchronous, and in-person exercises. This type of training avoided training interruption and the majority of students gave a positive response on the perceived quality of this training modality (5).

Online medical education that include practical clinical applications, simulated patients and virtual medical records is an area of research. When compared to no intervention, simulation in medical education training is associated with positive effects on knowledge, skills, and behaviours and moderate effects for patient outcomes. However, data is inconsistent on the effectiveness of asynchronous online learning when compared to traditional in-person lectures. Furthermore, studies utilizing modern visualization technology (i.e. virtual and augmented reality) have shown great promise as means to supplement lesson content in physiological and anatomical education.

The flipped classroom model and other hybrid modalities can be easily transitioned to an online format, by retaining the online asynchronous instruction that has already replaced lectures and converting small-group discussions and exercises to video conferences, online video library of patient encounters and encouraged clinicians to deliver online teaching from the hospital where possible (6).

Educational conferences can be recorded and uploaded to a cloud or sent to students or residents, allowing them to revise the concepts. Surgical procedure video libraries are particularly beneficial. Group viewing has been proposed as a more interactive and motivating exercise and the additional commentary by experts can add educational value.

Tele-conferences & webinars became the cardinal means of didactics and clinical education that allow clinical departments to implement lectures and teaching sessions for medical students, case discussions.
Simulation based education (SBE)

Simulation-based medical training offers the opportunities to reduce risks to patients and learners and increase patient safety (7, 8). With the advent of telemedicine and technology-based novel concepts such as flipped lectures, students learn to interact with and treat patients online, an increasingly important skill in medical education. In training, students and clinicians enter a "virtual patient room" in which they interact and share information with a simulated or real patient actors. Students are assessed based on professionalism, communication, medical history gathering, physical exam, and ability to make shared decisions with the patient actor. Simulators have shown to be as effective as live actor-patients for teaching purposes (9).

My reflection

The educational methods that can ensure continuity in the education of medical students during the pandemics should relay on the maximum use of remote or decentralised modes of medical education, online practical clinical applications and simulation-based medical training.

Online learning using zoom application with the possibility to share screen wireless in group rooms prevent students from gathering in learning studios, lecture halls, or small-group rooms during pandemic. Lectures and seminars given to all groups at the same time online. The lecturer communicate directly with the students and answer questions. By adding the video recording of the lectures and uploading in the class website, we decreased the possibility of missing the lectures due to lecturer’s absence.

Dividing all student in one medical education course (t.e.x. course 7) into small groups of student and each group take the lectures as well as the clinical skills in one of the main hospitals in south east region (Linköping, Norrköping, Jonköping and Kalmar) might assist in keeping social distancing during the pandemics. This will also improve the medical trainee education by increasing the volume of patient encounters that allows trainees to see atypical presentations of common diseases and rare diseases.

Simulation is one of the educational methods based on mock components and features of patient care, executed with simulated and standardized patients, mannequins, virtual-reality computer-generated simulation or combinations of these (10). One of the main subject in course 7 medical education program is Urology and one of the requirement is the clinical examination of the prostate which need direct contact with the patient. To decrease this type of direct contact, we started to use prostate exam simulator to teach techniques of prostate examination. Every student can learn to detect stages of prostate cancer in varying degrees of development. Catheterization simulator is another example where male and women bladder catheterization procedures can be realistically demonstrated, practiced and assessed.

I think the strategies adapted during the pandemic can be upgraded by using virtual-reality computer-generated simulation. Limitless scenarios possibilities in different simulation environments with virtual patients can be created to increase the effectiveness of education and replace the physical contact with patients during pandemics. This type of educational
method can be applied effectively in K7 in all subjects and especially in anaesthesiology and intensive care.

From this pandemics come the fact that we will need to be ready for the next global crisis. We do not know what the next crisis will be, but the more we know about the world we live in, the better we will be able to deal with it. At an institutional level, this means evaluating the crisis management mechanisms in place and strengthening them if necessary. Further research and studies needed to evaluate the effect of Covid-19 pandemics on medical educations in the future.

References