Training of medical students during and after the COVID-19 pandemic in Uzbekistan

Abstract

In the beginning of March 2020, the coronavirus disease 2019 (COVID-19) spread worldwide. Therefore, the purpose of this work was to report how training in ophthalmology was conducted in Uzbekistan during and after the pandemic. In our country student learning had continued and moved online since April 2020 (e.g., Moodle, Zoom). Lectures were converted from group meetings in conference rooms to online video conferences (Zoom). Virtual reality surgical simulators were developed. The long-term positive impact is that online video lectures and virtual clinical cases are likely to continue after the pandemic and will benefit our students and residents for self-directed learning, which will improve the quality of learning now and in the future.

Keywords: coronavirus disease, student learning, video conferences, distance learning, virtual clinical cases, telemedicine

Introduction

In the beginning of March 2020, the coronavirus 2019 (COVID-19) appeared and spread in our country and worldwide. Almost all countries have taken extreme quarantine measures to contain the virus. Higher education was temporarily stopped. Medical students and clinical clerks were sent home. It was considered that ophthalmologists could be at higher risk of infection because of their proximity to patients during clinical encounters. Despite this, our trainees and faculty members struggled with the new disease with its capricious course, with the lack of effective therapeutic options, and with the high mortality rate (July-August 2020). We have conducted research and published articles in local and foreign journals [1,2]. At the same time, at online conferences, the TMA program directors and teachers discussed further tactics and adaptation of the educational process to the situation.

Online education for medical students: advantages and disadvantages

Student learning had continued and moved online since April 2020 (e.g., Moodle, Zoom). Distance learning system «Moodle» contains presentations, questions and task, tests, virtual cases. Lectures were converted from group meetings in conference rooms to online video conferences (Zoom). Video lectures and video surgery were recorded and posted on the YouTube channel TMA. As in New York [3], these innovations have proven to be so useful to our students that they continue to use this format of lectures to prepare for classes now. Virtual electives included remote observation, virtual cases and simulations. Like the New York Medical College [4], our students practiced physical examination skills on roommates or family members with all the security precautions. Because of this situation and the need to improve the quality of distance learning, we have developed and implemented new models of virtual clinical cases and anatomical simulators. A disadvantage is that virtual learning reduce skills in interacting with patients, clinical thinking, and our ability to observe students and to evaluate clinical work. In the postpandemic era, we are planing to combine in-person clinical encounters and self-directed virtual learning to improve the quality of learning.

The COVID-19 pandemic required rapid adaptation to the current isolation situation. As a result, new programs, virtual learning models, have been developed and made more accessible, with long-lasting positive effects on medical student training.

Training for master's students and residents

The COVID-19 pandemic also had a significant impact on surgical training for resident: surgical training had come to a sudden halt for 6 months [5,6]. Residents were also unable to benefit from surgical

simulations at the clinic. Given the travel restrictions, no alternative surgical sites exist for residents. During the pandemic, we led online vebinars and demonstrated ophthalmological operations. Virtual reality surgical simulators were developed. International conferences (with USA, India and Russia) also moved online. Ophthalmologists from different countries shared their experience in ophthalmic surgery, and current issues of improving ophthalmopathology treatment were discussed.

Since September 2020, residents have returned to in-person clinical training, resumed operations, and seminars, which are undoubtedly useful for the quality training of residents. However, the experience of self-learning during the pandemic was certainly positive and will be used by our residents throughout the training period and in further practical activities.

Patient care and clinical research

During this period, all patients could potentially be infected with COVID-19. So every precaution had to be taken [7,8,9,10].Given the travel restrictions, outpatient volume had decreased and is restricted only to urgent care. A consequence of these restrictions is that some patients with chronic illnesses are losing their sight irreversibly. Therefore, Uzbekistan has developed virtual clinics and telemedicine programmes. Patients can address their complaints to the websites of the Tashkent Medical Academy and receive consultations from their attending doctors and professors. Urgent or emergent conditions: cavernous sinus thrombosis, orbital cellulitis with abscess, intraocular foreign bodies, continue to receive surgery. Clinical research also is restricted to ophthalmological complications of COVID-19: "red eye" symptom, follicular conjunctivitis, retinitis, retinal vasculitis, cavernous sinus thrombosis with orbital cellulitis and abscess. Department faculty have hosted interest panels successfully via video teleconferencing dedicated to COVID-19 (Russia-Uzbekistan, March, 2021). We also published articles showing the results of scientific research before the pandemic [11-15].

We are optimistic that we have passed the peak of the Uzbekistan epidemic now. Currently, restrictive measures are relaxed, and patients are free to consult doctors traditionally, but masks still recommended. The number of regular patients is increasing and we return to routine elective surgery. Only patients who receive a negative COVID-19 result are admitted to the ophthalmic department. The students are able to examine actual patients at the clinic again. A greater reliance on simulation training before actual surgery will benefit our residents and patients in the future.

Conclusion.

TMA has always evolved and adapted to changes to meet its triple mission of clinical care, education and research. The COVID-19 pandemic required rapid adaptation to continue to provide quality education to our students, residents of ophthalmology. As a result, virtual clinical cases and telemedicine have developed. The quality and availability of ophthalmology educational content has grown substantially, which may have long-lasting positive effects on medical student training. The long-term positive impact is that online video lectures and virtual clinical cases are likely to continue after the pandemic and will benefit our students and residents for self-directed learning, which will improve the quality of learning now and in the future.

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