Міністерство охорони здоров'я України
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Матеріали

науково-практичної конференції
з міжнародною участю

"Симуляційна медицина погляд в майбутнє"

(впровадження інноваційних технолоогій у вищу медичну освіту України)

м. Чернівці
19 лютого 2021

МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ

МАТЕРІАЛИ

НАУКОВО-ПРАКТИЧНОЇ КОНФЕРЕНЦІЇ

З МІЖНАРОДНОЮ УЧАСТЮ,

"МЕДИЧНА СИМУЛЯЦІЯ - ПОГЛЯД В МАЙБУТНЄ"

(впровадження інноваційних технологій у вищу медичну освіту України)

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У тезах доповідей науково-практичної конференції з міжнародною участю лікарів, науковців та молодих вчених, подаються стислі відомості щодо результатів наукової роботи, виконаної учасниками конференції.

С 37Медична симуляція – погляд у майбутнє (*впровадження інноваційних технологій у вищу медичну освіту України*) (для лікарів, науковців та молодих вчених) : наук.-практ. конф. з міжнар. участю. Чернівці, 19.02.2021 року: тези доп. / Чернівці: БДМУ. – 267 с.

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issues in the educational process requires non-standard approaches. Thanks to our small but agile team, the capabilities of our medical university have created and mastered many new methods of teaching of English-speaking students. Thanks to the university's distance learning server (MOODLE) and technical capabilities, we have created the necessary online courses in record time. Complete online courses became available to medical students in a matter of weeks, from concept to launch [2, 3]. The most important skill of our time is the skill of learning. To help our students acquire this skill, unique channels have been created in Telegram and Viber Messangers (cloud instant messaging platforms). It allowed us to post daily tips for self-learning and online education. The tips were practical and based on previous experience, focusing on simple, practical actions that anyone can use, especially at home. Classes with students were conducted using a Google Meet application in videoconferencing. Teachers had the opportunity to demonstrate presentations, photos and videos for greater clarity and better assimilation of theoretical material by students. MCQs and situational tasks were used to interview and assess students' knowledge by Google Forms. During the module control, the teacher had the opportunity to work with each student individually, the survey was conducted orally, with the mandatory use of a video camera. In summary, we can conclude that under certain circumstances, distance learning is a necessary form of learning process, and can to some extent be used to teach students in higher education. We hope to continue to use the power of digital learning for the benefit of society.

Thus, the staff of Bukovinian State Medical University managed to provide the basic educational needs of foreign students at a high enough level, to promote the acquisition of not only theoretical material but also practical skills and abilities necessary for future doctors.

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MEDICAL SIMULATION HELPS STUDENTS TO IMPROVE THEIR PRACTICAL SKILLS ON GENERAL SURGERY

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In order to better assimilation of practical skills by students at the *Nicolae Testemitanu* State University of Medicine and Pharmacy (SUMPh), simulators and manikins of different grade of complexity and fidelity have been actively used since 2013. Medical simulation acquired particular importance during the COVID-19 pandemic, in the context of a dramatic restriction of direct contact between students and patients. The SWOT (Strength, Weakness,

Opportunities and Threats) analysis tool was used to assess and systematize the accumulated 7-year experience in use of medical simulation.

Current university curriculum places the "General Surgery" during the 3rd year of study, as a one of the first clinical disciplines. So, almost for the first time students from classrooms get into the hospital environment and directly contact with patients. In this regard, the staff of the Department has a major responsibility for the development of basic clinical and minor surgical practical skills in students, which they will need during their future professional activities. At the same time, medical education should take into account the increased requirements for the safety and protection of the personal rights of patients. In 2013 SUMPh launched the University Center for Simulation in Medical Training (CUSIM), with its branches in some departments, including General Surgery. This marked the beginning of a new approach and significant increased opportunities for students in obtaining practical skills. However, during the 7-year period of using medical simulation, we have accumulated some experience, which is presented here in a brief form of SWOT analysis.

Strengths. (1) Endowment of the surgical clinic (CUSIM branch since 2013) with simulators and manikins, as well as allocation at the department of 2 separate rooms specially designed for medical simulation. (2) Expanding the list of purely practical topics by introducing of "Sutures and knots" and "Catheterization and minor surgical procedures", in addition to traditional "Asepsis", "Blood transfusion", and "Dressings and bandages". (3) New topics include assimilation by students of important practical skills, for example familiarization with common surgical instruments and suture materials, placing and removing of skin sutures, tying the different types of knots, peripheral and central venous access, technique of intravenous infusion, thoracentesis and thoracostomy, paracentesis, gastric intubation and balloon tamponade tube insertion, urethral catheterization, and other. (4) All of above mentioned manipulations are carried out by students initially on simulators, with further possibility to apply the acquired skills in real clinical conditions. (5) Provided complete theoretical support: lectures, textbooks, practical work guides, e-learning modules – video presentations available on the Department's website. (6) Department staff have a long-term experience in organizing surgical skills workshops on biological material for students. (7) Additional motivation of students by introduction of skills module in componence of the final examination, which includes assessment of basic skills at 4 separate stations: Dressings and bandages; Asepsis, instruments, sutures and knots; Minor surgical procedures; and Clinical case (semiology). (8) During the COVID-19 pandemic, medical simulation allowed students to continue acquiring practical skills, with appropriate high level of infectious protection.

Weaknesses. (1) The suboptimal "students per simulator" ratio. (2) High cost of industry-made simulators, which in some cases can reach thousands of euros. (3) Rapid destruction / disrepair of daily used simulators. (4) Difficulties in communicating with patients by international English-speaking students during performing practical procedures in real clinical conditions.

Opportunities**.** (1) Optimizing the "students per simulator" ratio. (2) Increasing the number of learning hours devoted to development of practical skills. (3) Increasing the efficiency of summer practice, and ensure proper check-list control. (4) Supplying departments with new, low cost (including improvised / hand-made) simulators. (5) Creation of the small shop or technical laboratory (within CUSIM) for making and repairing of broken medical simulators. (6) Consideration should be given to the wide use for practical skills teaching of virtual and augmented reality (i.e. virtual patient, virtual procedure). (7) Completion of the "Informed

Consent" from the University Hospitals with an additional position, regarding agreement of patients for their examination and the performing medical procedures by students.

Threats**.** (1) The actual form of "Informed Consent" does not include patient's permission for examination and / or manipulation, including invasive ones, by SUMPh students. (2) The performance of invasive procedures by students can lead to increased morbidity, and, respectively, to the dissatisfaction (resistance) of the hospital authorities and healthcare staff. (3) Procurement of new simulators, manikins and supplies, manufactured abroad, and their more intense use can significantly increase the overall costs of medical education. (4) The inability to consolidate simulator-obtained practical skills in real clinical conditions can lead to their loss during subsequent years of study.

Conclusions**.**Education process enhanced by simulation elements allows students to acquire basic medical and surgical practical skills, wherein to maintain patients' safety and to minimize the medical risk.

However, in contrast to the evident advantages of simulation training, significant risks were identified associated with the complexity of the constant supply and maintenance of simulators in working order, as well as the transfer of acquired practical skills into clinical practice.

The assimilation of practical skills by medical students is a continuous process, with a progressive increase in the level of responsibility, constant development and gradual approach to real clinical conditions, and requires close supervision by mentors.

Medical simulation has been shown to be a "salvage" measure during the COVID-19 pandemic, allowing to maintain an acceptable level of practical skills assimilation by students in a safe epidemiological condition, outside of the potentially hazardous hospital area.

HEALTHCARE DEVELOPMENT CONCEPT

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The concept has identified priorities for reforming higher education in Uzbekistan until 2030.

Presidential decrees and decrees, which are the legal basis for reforming the higher education system, are aimed at modernizing higher education in accordance with modern requirements, training highly qualified personnel, introducing advanced technologies, further improving the quality and efficiency of educational processes. Among them is the Decree of the President of the Republic of Uzbekistan PF-5847, signed on October 8, 2019, approving the concept of development of higher education in the country until 2030. The results of the analysis of this decree and concept are therefore described below.

By 2020, the number of higher education institutions in the country has reached 115. Of these, 94 are located in the regions (local). 21 higher education institutions are foreign or their affiliates.

In 2019-2020 alone, 59 higher education institutions will provide part-time education, and 10 will provide evening education. There are 410,000 undergraduates and 13,000 graduate students. This figure has increased 1.7 times in the last 3 years.