

THE ROLE OF MODERN IMITATION EDUCATIONAL TECHNOLOGIES IN IMPROVING QUALITY

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Abstract

Today, the teaching methodology, like all didactics, is going through a difficult period. Currently, the goals of higher medical education have changed, new curricula are being developed, new approaches to reflecting the content through not separate isolated disciplines, but through integrated educational areas. New concepts of education based on the activity approach are being created. It is known that the quality of knowledge is determined by what the learner can do with it. As time has shown, unfortunately, the forms of passive-informative teaching of students do not overcome the differences between the assimilation of the theoretical material of academic disciplines and the level of proper formation of students' creative clinical thinking and research skills. Today, we cannot rely only on explanatory-illustrative and reproductive methods that are widely used in teaching practice. Updating education requires the use of non-traditional methods and forms of organization of education, including integrative ones.

Keywords: simulation technology, integration, medical education.

INTRODUCTION

In the modern world, in the era of rapid development of high-tech medicine, society makes high demands on the quality of medical services. It is this indicator and the quality of life of patients after treatment that should underlie the assessment of the professional activities of individual specialists and medical institutions, as well as the level of healthcare in general [1,6].

The classical system of clinical medical education is not able to fully solve the problem of high-quality practical training of a medical

worker. The main obstacles to this are the lack of continuous feedback between the student and the teacher. Therefore, the key task of modern medical education is to create conditions for the development of a wide range of competencies and well-established practical skills among students without the risk of harm to the patient. This includes developing the ability of the healthcare worker to make quick decisions and perform flawlessly a range of manipulations or interventions, especially in emergencies. One of the methods to improve the quality of practical training of future

doctors is the use of simulation technologies [2,4,8].

Simulation is an imitation of the execution of a real process or the operation of a system for a certain time. Simulation is used in many contexts such as technology simulation to optimize efficiency, security design, testing, training, education, and video games. Basic clinical-theoretical training of physicians includes non-technical skills such as communication, clinical judgment and planning. To master and improve technical/psychomotor and communication skills, constant practice and simulation are necessary, which allows you to bring the technique of performing these techniques to automatism. The use of simulation techniques and methods in medical education is called simulation education in medicine (SEM) [3,5,10].

Simulation Centers (SC) or Clinical Skills Laboratory (CLL) is a training center for medical students (in universities) or medical professionals (in postgraduate education), which provides an opportunity to learn and practice skills and manipulations in a safe and secure environment. To date, the world has already accumulated significant experience in the application of innovative educational technologies in medicine. Skills acquired in virtual reality are successfully transferred to the real clinical setting. Thanks to the creation of such centers in the USA, Germany, Great Britain, Japan, Korea and other developed countries, the quality of the implementation of practical skills was achieved, bringing them to automatism[7,9].

GOAL

To study simulation in medical education - a modern technology for teaching and evaluating practical skills, abilities and knowledge, based on realistic modeling, simulating a clinical situation.

MATERIALS AND METHODS AND THEIR DISCUSSION

We repeatedly talk about the quality of medical education, but what should be understood as the quality of education, how should it be measured and how should it be improved? The answers to these questions are not so simple.

The high quality of education, including medical education, is:

- compliance of the content of educational programs with the requirements of customers and educational standards;
- high satisfaction of stakeholders with the quality of educational services;
- high satisfaction of teachers and employees of the educational institution with their work;
- positive impact on society, increasing the general culture and education of its members.

But when it comes to improving the quality of education, one cannot fail to mention the so-called internal quality system, which provides for control over:

- staffing of educational activities;
- educational and methodological support of educational activities;
- material and technical support;
- the quality of the training sessions;
- quality of students' knowledge;
- ensuring student mobility;
- ensuring the availability of information systems for the effective management of the educational process;
- monitoring and periodic review of educational programs;
- ensuring publicity of information about educational programs, degrees of higher education and qualifications;

In many countries there have been global changes in priorities in medical education: from structure to process, and in the last decade - to educational outcome. This was characterized by the active introduction of new learning technologies, such as problem-based, electronic, mixed, team, simulation and others.

It must be admitted that today the material and technical base of medical universities does not meet international standards. Our educational buildings, classrooms and laboratories do not meet the requirements of the times. But at the same time, we are constantly looking for ways to solve these problems.

In order to achieve the desired result, we need to take into account the best practices of developed countries and introduce all the good things into our medical education system.

RESULTS

Currently, medical education in the republic faces a number of challenges, including an increase in the number of students, a change in their preferences regarding learning styles, and the need to reduce the gap between theory and clinical practice. In addition, increasing attention is being paid to patient safety, ethical issues, increased accountability of medical professionals, the high level of required professional qualifications, and the rapid evolution of procedures and methods. All this requires the adaptation of curricula using all available educational tools.

Today, there is an acute shortage of highly qualified specialists in the medical industry. Therefore, it is natural that one of the main directions in the field of higher medical education is the need to significantly strengthen the practical aspect of training future highly qualified specialists while maintaining the proper level of theoretical knowledge. The introduction of innovative educational technologies determines the demand for highly qualified specialists who can increase the competitiveness of healthcare in the Republic of Uzbekistan.

The higher medical school should provide graduates with a system of integrated theoretical and clinical knowledge, skills and abilities, help them master the world's high medical technologies, and form the ability of a doctor to adapt socially. The implementation of these tasks contributes to the holistic training of a medical worker, based on a strong motivational attitude, deep specialization, updating the intellectual and personal capabilities of students.

The task of a teacher of a medical university is to clearly organize and adequately manage the independent activities of students: set tasks, correct the course of their solution, record and evaluate the results of the students' efforts. If a student does not learn to independently achieve knowledge, then he will not make a good doctor, capable of introspection and self-criticism.

But despite all our efforts today, graduates of medical universities do not have practical skills in working with high-tech, innovative equipment. Often their knowledge is theoretical in nature. A very limited number of young doctors can afford to undergo an internship or advanced training in foreign clinics or educational universities, since the cost is quite high. It is also important to constantly develop the acquired skills by doctors.

Traditional forms of medical education do not provide a completely safe and effective preparation before the medical professional begins to actively work with patients. In addition, modern forms of monitoring the level of competence of doctors are mostly inconsistent or insufficient.

In practical classes, the student should not just retell the memorized text, but should solve practical problems.

The task of students is to study independently in the presence of a teacher - mentor and consultant. First of all, this requires readiness in terms of motivation - an understanding of your goals and values: I want to learn for what or for what. No less important is the comprehension of intellectual and cognitive aspirations - the acquisition of conceptual knowledge, norms

and methods of activity: I can learn, I know what exactly and how.

However, it is necessary not only to use innovative teaching technologies, but to achieve specific measurable results through them, which can be demonstrated by students.

To solve all these accumulated problems, it is necessary to widely introduce a system of simulation training into medical education, starting from training at a higher educational institution and up to the stage of lifelong learning.

Everyone knows that many medical universities and leading clinics in the world, on the basis of which doctors and students undergo training and advanced training, are introducing the practice of using simulation equipment and robotic patients, the technical characteristics of which are as close as possible to a real patient. A system of accreditation and assessment of the level of knowledge and skills of both students and doctors of all directions is being introduced.

The simulation center can be used by students of medical universities (for example, when studying anatomy, physiological functions, getting acquainted with the methods of medical examination), residents (for example, to master and improve the skills of performing manipulations and techniques, in preparation for practical exams, in advanced training courses, exams to confirm certificates, etc.), in the continuous training of doctors or nurses (for example, the acquisition of practical skills, teamwork competences) or to test competence before hiring.

Today, when the number of students in medical universities has sharply increased, there are 8-10 students per patient. From an ethical point of view, this is unacceptable, since seriously ill patients need special care and adherence to the daily routine. Even such a harmless procedure as taking an anamnesis can also tire the patient. It is precisely to solve these problems of medical education that simulation technologies are needed: so that all algorithms and practical skills can be worked out without harm to the patient's health, and students and doctors can be

taught how to act in emergency situations. This is important, among other things, for the development of minimally invasive treatment methods that are currently being developed, and for the effective use of medical equipment. And a student should come to a sick person with already developed practical skills - when a hand is put, there are developed algorithms, certain skills that have grown into skills. This will enable the student to feel more confident around the patient. Thus, simulation training makes it possible to get acquainted with all the diseases provided for by the curriculum, regardless of whether there is a patient with pronounced symptoms in the clinic at that time or not. And most importantly, when teaching students using simulation technologies, there is the possibility of a planned practice for each of them. The simulation includes activities aimed at developing practical skills, algorithms and communications.

In order to master practical skills and improve the quality of training of specialists in 2018, the Simulation Education Center was created at the Tashkent Medical Academy, which was equipped with modern robotic simulators, dummies, phantoms and 3D programs (virtual patient, pathology).

In TMA, students, starting from the 1st year, are trained in the simulation center, where there are separate rooms for mastering patient care skills. At senior courses, in accordance with the curriculum, they are trained in medical manipulations (intravenous interventions, intramuscular injections, gastric lavage, etc.), basic cardiopulmonary resuscitation, primary care, obstetric skills, skills in helping children, skills in urology, oncology, otorhinolaryngology, ophthalmology, endosurgery (laparoscopy, hysteroscopy).

In the 2020-2021 academic years, for the first time, final exams for 6th-year students in the medical and medical-pedagogical areas were held at the simulation center. Reducing the role of the human factor in final exams has led to a reduction in stress among graduates and obtaining objective grades.

Taking into account the fact that simulation training for our republic is a new type, TMA has established contacts with partners from Russia, directly with ROSOMED (Russian Society for Simulation Education in Medicine). From May 28 to June 5, 2021, 124 TMA employees took online courses on simulation training, which were organized by the Department of Clinical Modeling and Manual Skills, Faculty of Fundamental Medicine, Lomonosov Moscow State University. More than 70 teachers who successfully completed the training and passed the test exams received certificates. On June 11, 2021, a master class on simulation training was held at TMA with the participation of international experts.

For the Tashkent Medical Academy, as well as for other medical universities in the country, these are the first steps in simulation training. We will further improve this system.

In our opinion, in order to assess the effectiveness of simulation training in the process of improving the quality of practical training of students, it is necessary to take into account the following, closely related indicators:

- availability and individualization of education; compliance of the structure and content of training with current needs and trends in health care;
- the level of technical equipment of the educational process. It is necessary to constantly update and equip with new equipment;
- implementation of a multi- and interdisciplinary approach. Today it is impossible to allow departments to prepare students in isolation, integration is needed;
- quality of methodological support of the educational process. Our programs and all documents must comply with international standards;
- indicators characterizing the results of control and evaluation activities. Evaluation should be objective, it is necessary to emphasize students' self-esteem. And only when the assessment of the student, set to

himself, will coincide with the assessment of the teacher, we can talk about objectivity. But at the same time, one hundred percent objectivity can be achieved only by reducing the human factor.

CONCLUSION

The future of medicine in Uzbekistan depends entirely on the quality of our graduates. In order to improve the quality of education and the quality of medical services provided, it is necessary to:

1. Create a Simulation Center where students will, without fail, according to the curriculum, practice practical skills in providing medical care, such as providing first aid to a patient in an ambulance while the car is moving, and ending with complex surgical operations, obstetrics, dentistry, ultrasound diagnostics, etc. . Simulators will cover almost all areas of the educational process.

2. Conduct master classes for students and a wider contingent of interested doctors with the involvement of leading world-class professors. Conduct preoperative training of the surgical team to predict possible complications during surgery on a real patient and work out the work of each doctor, from the anesthesiologist to the surgical nurse.

3. It is possible to conclude agreements with leading manufacturers of medical equipment to conduct training courses on their equipment in these training centers, and in this case, the coverage of doctors and young professionals will increase several times and will allow you not to travel to similar centers in foreign clinics and training centers.

More than 6,000 undergraduate, graduate and clinical residency students study at the Tashkent Medical Academy. Also, the process of advanced training and retraining of specialists is being actively conducted (more than 200 doctors are trained every year). For the educational process, it is necessary to create a simulation center for mastering practical skills in all disciplines, followed by accreditation and licensing of practitioners.

Thus, the priority direction for the development of innovative technologies in the field of education in medical institutions is the creation of a SIMULATION CENTER. In doing so, you need to pay attention to the following points:

- introduction of simulation technologies into the practical training of students of medical universities, which will allow to avoid mistakes in the process of providing medical care;
- strengthening the practical training of students should begin from the first year and continue throughout the entire educational process, consolidating the acquired knowledge in practice, especially those that are associated with an increased risk for the patient. Simulators allow you to repeatedly repeat each skill in identical conditions, and, if necessary, recreate a specific clinical scenario;
- simulation training makes it possible to objectively control knowledge and skills, which makes it possible to compare theoretical knowledge with the quality of a specialist's practical work;
- interaction with foreign colleagues to exchange experience, improve the methodology of simulation training;
- will increase the attractiveness and effectiveness of educational activities (courses, thematic improvements, master classes) for practical healthcare professionals in the system of continuous medical education, as well as other contingent of students in first aid.

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