

**"THE ROLE AND IMPORTANCE OF SIMULATION TECHNOLOGIES IN THE
EDUCATIONAL SYSTEM OF THE MEDICAL FACULTY"**

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Relevance Nowadays, great attention is paid to improving the quality and efficiency of medical care for the population in the Republic of Uzbekistan.

The most common causes of conflict between patients and healthcare professionals in practical healthcare are insufficient practical skills in performing medical procedures - diagnostics and treatment, and violations of deontology and ethics in communicating with patients and their relatives.

As follows from the normative and legal documents of the Ministries of Higher Education, Science and Innovations of the Republic of Uzbekistan and the Ministry of Health of the Republic of Uzbekistan, the development and organization of professional medical education in our country is a priority area of government activity in the socio-economic sphere.

In modern conditions, the urgent tasks of higher medical schools are to train future specialists The development and effective use of modern methods, objective assessment of knowledge, and further improvement of the quality of students' mastery of practical skills are considered.

To solve the problem of the shortage of highly qualified medical personnel, it is necessary to significantly strengthen the organization of the educational process in medical universities with a focus on practice, as one of the directions of higher medical education, which, in turn, will help maintain the theoretical training of future doctors at the necessary level and increase professional motivation among students, starting from the 1st year of the medical faculty. It creates conditions for the formation and development of.

Theoretical training of specialists with higher medical education has always been and remains the basis of the educational process.

At the same time, in order to successfully implement medical activities and effectively solve professional problems, students must learn to acquire practical skills during their studies at the university.

In this regard, in modern conditions, questions arise about organizational, ethical, and financial issues in solving these tasks in the field of clinical sciences.

This is a pressing problem for clinical departments, which face organizational and administrative difficulties in training specialists based on state educational standards.

In a real practical situation, when working with patients, it is not always possible for a teacher to teach students the necessary practical skills and competencies and to consider various diseases in a specific patient.

This problem is further aggravated by the fact that the patient may refuse to participate in the diagnostic and treatment process, especially medical procedures, based on legal, ethical, and moral standards.

Modern medical education cannot be implemented without teaching practical skills and competencies that can be applied in real life and professional settings.

Mastering practical skills cannot be learned only by having a theoretical basis for performing certain medical procedures; practice-oriented training must also be received during undergraduate and postgraduate education.

The introduction of innovative methods into the process of professional training aimed at improving the teaching and mastering of practical skills involves the use of simulation methods in the educational process.

Simulation training methods have been known in medicine for a long time.

In our time, this form of training medical specialists began to develop actively in the 1970s and is currently considered a generally established standard in the training of doctors of various specialties.

The use of simulators of varying degrees of technical complexity allows for the repeated performance of certain medical procedures in conditions that are as close as possible to a real medical situation.

When practicing practical skills and knowledge, there is an opportunity to identify errors in performing manipulations on a simulator at the same time and repeat them many times with the teacher monitoring the correct execution of movements, which significantly reduces the risks for patients.

In modern conditions, simulation training is considered the most important component of medical personnel training worldwide.

Thus, in the modern conditions of healthcare development, in the conditions of high demands placed on medical workers by the state and society, highly qualified medical personnel with fundamental theoretical and practical training are needed.

The problem of practical training is solved by simulation centers, the advantages of which are undoubted, which have the following advantages:

- gaining knowledge, practical skills and clinical experience in a virtual environment without risk to the patient;
- repeating actions several times to practice practical skills;
- the ability to identify, manage, recognize and eliminate errors;
- the ability to develop students' ability to quickly make competent decisions;
- the ability to objectively assess the correctness of manipulation;

- the ability to simulate rarely encountered clinical situations;
- the absence of fear of harming the patient in students.

Simulation-assisted teaching in medical school allows students to present a variety of clinical situations while eliminating ethical, moral, and legal constraints on patient interaction.

Given the urgency of the issue under consideration, it is appropriate to further explore the possibilities of simulation training in the preparation of qualified physicians in accordance with the requirements of state educational standards.

Research objective: To describe and evaluate the potential of simulation technologies in the formation of practical skills in the general educational process of training qualified specialists with higher medical education.

Research materials and methods. This study analyzed the scientific and methodological literature on various aspects of simulation training at a medical university.

To achieve these goals, the potential of GulSU in the complex process of training future doctors was studied.

A voluntary survey was conducted among 200 students of the medical faculty on the basis of the principle of anonymity.

Research results and discussion. In modern conditions, practical training of future doctors is considered an important component of increasing the professional motivation of medical workers. This requirement is ensured by creating simulation centers and monitoring the level of students' mastery of knowledge, skills and abilities, as well as allowing them to perform medical procedures on patients.

Simulation technologies in the educational process at medical universities create ample opportunities for students to acquire practical knowledge and skills, such as: patient examination, palpation, percussion, auscultation, fiberoptic bronchoscopy, colonoscopy, gastroscopy, laparoscopy, spinal puncture, pleural puncture, venipuncture, injection, and others. In addition, at the discretion of the teacher-trainer, it is possible to modify the programmed tasks and simulate various clinical situations.

The lack of knowledge or its low level in such fundamental disciplines as "Normal and Pathological Anatomy", "Normal Physiology", "Pathophysiology", "Clinical Biochemistry" does not allow students to understand the processes occurring in the patient's body and take appropriate measures to solve real or simulated professional problems.

The refore, training based on simulation technology is built on the principle of mastering the following stages and foundations of medical education: knowledge, abilities, and skills.

In our opinion, such a mutual cooperation creates the conditions for the competent performance of medical procedures and serves to form a holistic professional personality of a specialist both at the graduate and post-graduate levels.

Thus, the organization of the educational process according to the principle of stages makes it possible to form and develop clinical thinking based on knowledge of the

processes occurring in the patient's body, which is clearly confirmed by working with the "virtual patient" simulator.

Training in this simulator allows you to create clinical scenarios of varying degrees of complexity in the chosen specialty. When the person performing the practical action acquires the concepts of "right" and "wrong", along with theoretical knowledge, practical skills are also acquired.

The result of the action is analyzed and a conclusion is drawn: "you can do this", "you cannot do this".

When the student repeats the actions repeatedly, the actions become automatic, and the skills become a skill.

It is through this interaction of "knowledge - skills - competence" that a qualified specialist is formed.

In such a training environment, a student, clinical resident or doctor performs professional actions consciously in a virtual environment and in real practical work.

The formation of professional knowledge, skills, and competencies depends not only on the teacher, but also on the students, their desires and wishes for flawless, constructive medical practice.

The practical aspect of training at the Faculty of Medicine is gaining importance and is not related to the choice of a future medical specialty.

In this regard, a survey was conducted among 200 students of the Faculty of Medicine of GulSU.

Students were asked to anonymously answer questions about the need to have practical skills when studying at the Faculty of Medicine.

All respondents emphasized the need to work on the basis of simulation technologies, understanding the need to have knowledge, skills, and practical experience using simulators of varying complexity before performing medical manipulations on a patient.

92.5 percent of respondents emphasized that this approach to organizing the educational process helps to develop tactics, make decisions in various situations, and increases motivation for learning and self-study. Survey participants highly appreciate the opportunity to work on high-tech computer simulators with the creation of various clinical situations.

The survey asked respondents: "From which year is it appropriate to start teaching simulation technology?" The analysis of the responses revealed the following opinions: from the 1st year - 13.2%, from the 2nd year - 12.9%, from the 3rd - 51.7%, and the rest - from the 4th year.

Therefore, more than 2/3 of the respondents believe that situation-based learning should begin from the first year of school.

Conclusion. Simulation exercises are the development and improvement of practical skills using a virtual model of a real problem.

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