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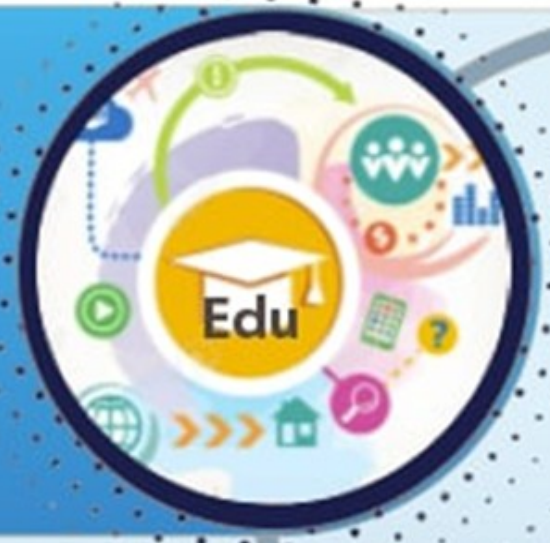

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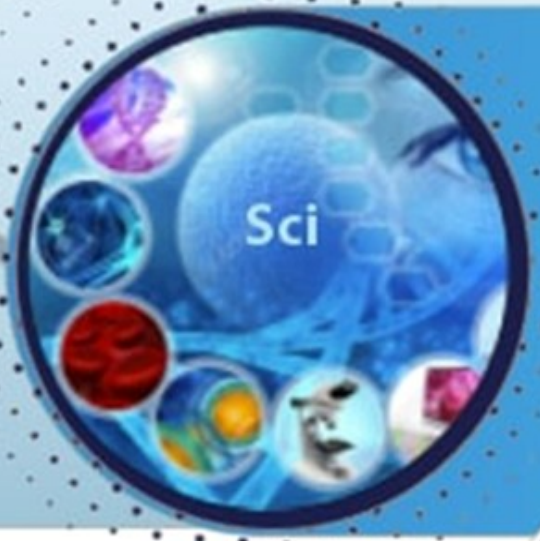

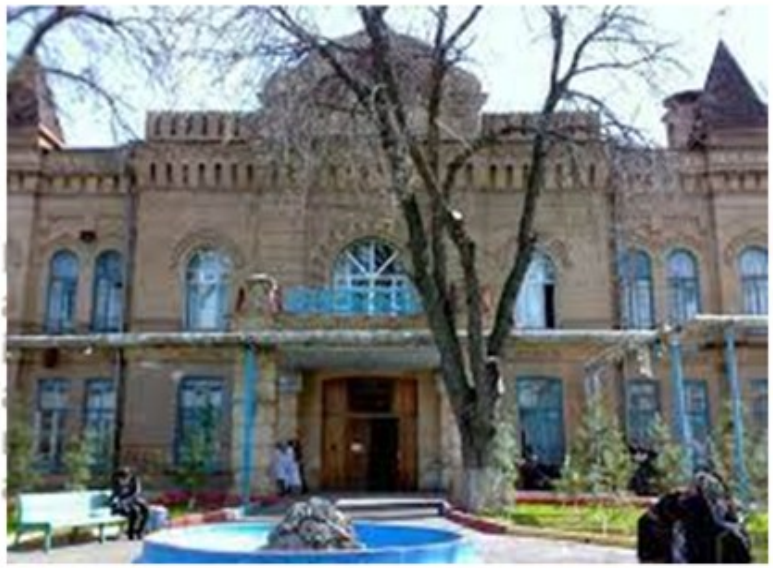

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Review Article

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Simulation Education and its Role in Improving the Quality of Medical Education

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Abstract

The article presents the results of the application of simulation educational technologies based on the Tashkent Medical Academy of the Republic of Uzbekistan. The introduction of training simulation courses into the educational process of training medical personnel at all stages of continuous medical education will help reduce medical errors, reduce complications and improve the quality of medical care to the population.

Keywords: simulation training, simulation educational technologies, continuous medical professional education

Over the years of independence, and especially over the past 5 years, the Republic of Uzbekistan has done a huge amount of work to reform the entire education system, including higher medical education.

At the same time, an extremely important role in improving the quality of medical care and the formation of a highly qualified specialist is given to the training of bachelors, masters, advanced training and retraining of doctors, the introduction of new pedagogical technologies and innovations, modern technical teaching aids using information technologies.

In order to solve such problems in many countries there have been global changes in priorities in medical education: from structure to process, and in the last decade - to educational results. This was characterized by the active introduction of new learning technologies, such as problem-based, electronic, mixed, team, simulation and others. However, it is necessary not only to use innovative teaching technologies, but also to achieve specific measurable results through them, which can be demonstrated by students.

The quality of medical care for patients directly depends on the level of training of medical specialists who own modern methods of diagnosing and treating diseases, who are able to put into practice the latest achievements of medical science. 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 doctors while maintaining the proper level of theoretical knowledge [9].

It became clear that traditional medical education, which meant the training of specialists with medical education in the form of lectures, practical exercises with the development of manipulations on the simplest phantoms and simulators, seminars, participation of students in medical activities under the supervision of general and direct supervisors during production practices, requires a thorough review. Along with this, I would like to note that the effectiveness of practical training is inextricably linked with the methodology for conducting practical classes, their educational and methodological support. The material and technical support of the educational process is a necessary condition for the high-quality training of specialists in accordance with the requirements of curricula and programs. When it comes to the training of general practitioners, it is necessary to realize the fact that, along with great success in the process of international integration, there are problems in the material and technical equipment of medical universities. Today it is impossible to train doctors without simulation centers. Undoubtedly, in every medical school of our republic there are phantoms, dummies, simulators for practicing practical skills. However, at the same time, it should be recognized that these devices are obsolete and do not meet international standards. At the present stage of development of higher

medical education, the use of modern phantoms and simulators in the educational process is relevant. This is because it is not always possible to demonstrate thematic patients at the clinical bases of the departments. In some cases, students do not have the opportunity, including from the point of view of ethics, to work out certain methods of medical manipulations: cardiopulmonary resuscitation, intravenous, intramuscular injections, etc. To solve this problem, the organization of centers of simulation medicine based on higher educational institutions is optimal.

Simulation (simulatio - from Latin “pretense”) is the art of imitating reality, a false image of a disease or its individual symptoms, in which the student acts in the proposed environment and knows about it [4]. In simulation training, the main thing is to acquire the necessary theoretical knowledge and practical skills without harming human health, while maintaining the completeness and realism of modeling, which will help reduce medical errors, reduce complications and improve the quality of medical care for the population [5, 8].

A lot of experience has already been accumulated, proving the effectiveness of simulation training. Numerous evidence have been obtained that testify to the successful transfer of the skills acquired by the doctor to the patient [10,11,12], which could not but lead to the extensive development of a network of simulation centers. Through simulation training, students are taught clinical skills without putting the health of real patients at risk [1,3,6,13].

The use of interactive simulators, patient robots and simulators: allows you to recreate a real controlled situation for practicing medical care skills; makes it possible to repeatedly practice certain exercises and actions; provides quality control of medical care based on the results of the training; allows you to simulate various clinical situations, including rare clinical scenarios; provides an individual approach to the preparation of students [7].

For our republic, the widespread introduction of simulation education is still new and requires the improvement of curricula, taking into account the conduct of classes in the simulation center.

Only within the framework of simulation training, it is possible to bring to automatism not only the ability to perform an action, but also to work out a way to perform complex actions, provided by a combination of knowledge and skills, by repeated repetitions. With the correct setting of goals and objectives of the simulation center and the development of practical skills, teachers and students will have the task of realizing the importance of this process (the severity of learning) and responsibility for their activities in the future [2].

However, despite the obvious advantages of simulation technologies, several reasons prevent their widespread implementation: the high cost of training equipment; lack of generally accepted approved methods; shortage of teaching staff who know the methods of simulation training. But these problems are solvable.

Since 2019, a simulation-training center has been established at the Tashkent medical academy (TMA) and Andijan medical institute. The simulation training center at the Tashkent Medical Academy consists of 10 training floors (emergency therapy, virtual reception, resuscitation, operating room, pediatrics, obstetrics and gynecology, therapy, surgery (ophthalmology, ENT, dentistry, urology), equipped with simulators of a high degree of realism, room briefing and debriefing, an expert zone (equipped with computers in which checklists are installed), 7 rooms for the OSCE reception, with a separate expert zone. The simulation center of the Andijan medical institute differs somewhat from the TMA in its structure; in particular, they do not have a separate expert zone and rooms OSKE.

The TMA Simulation Center is equipped with state-of-the-art simulators of the highest level of realism. Virtual patient Academics 3D with a detailed description of the classification, pathogenesis, anamnesis, complaints, examination, symptoms, methods of diagnosis and treatment. In Theory mode, the user is given the opportunity to select a specific disease and model it step by step at various levels. In the practice mode, the user is asked to diagnose the patient who comes to the appointment and prescribe treatment (more than 150 scenarios), an assessment of the measures taken is carried out.

Given the fact that simulation education is a new teaching method for our republic, several teachers were sent for an internship at the leading Russian simulation-training center (Kazan). Within two years, seminars and trainings for the teaching staff were held. Students of 1-6 courses were trained at the center according to the schedule. First year students were mainly trained in patient care skills. During the 2nd and 3rd year, students were trained in such medical manipulations as the technique of performing intramuscular and intravenous injections. Students of 4-5 courses are trained in the skills of cardiopulmonary resuscitation. In addition, there is an opportunity to develop the clinical thinking of students using the "virtual patient" program. Residents, masters and advanced training cadets are trained on more complex simulators (LapVision, EndoVision, Angio Vision, HystVision/TUR, SonoVision, and Dent Vision). The degree of assimilation of practical skills is constantly monitored.

The main feature of the simulation center is the ability to bring practical skills to the level of automatism and the objectivity of the assessment.

Thus, the priority direction for the development of innovative - simulation technologies in the field of education in medical institutions is:

- introduction of simulation technologies into the practical training of students of medical universities and postgraduate education;
- strengthening the practical training of students starting from the first year and continuing throughout the entire educational process, consolidating the acquired knowledge in practice, especially those that are associated with an increased risk for the patient;

- 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;
- increase the attractiveness and effectiveness of educational activities (courses, thematic improvements, master classes) for practical healthcare professionals in the system of continuous medical education.

In our opinion, simulation training is not opposed to traditional bedside training. No matter how high-tech a patient simulator may be, it cannot replace a real patient. Education obtained only with the use of simulation technologies will be one-sided, since the multifaceted "treatment of the patient" will be replaced by the implementation of a limited set of practical skills, albeit worked out in detail. Simulation training and bedside training are complementary components of modern medical education. Simulation training will serve as an important addition to the clinical stage of training and improving practical skills.

Ethical aspects - all research complies with ethical standards

Conflict of interest – no

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References:

1. Aniskin V.N., Busigina A.L. Razvitie kommunikativnogo integrativnogo komponenta professionalnoy kompetentnosti prepodavatelya vuza v usloviyax xolistichnoy informatsionno-obrazovatelnoy sredi // Baltiyskiy gumanitarniy jurnal. 2017. T. 6. № 4 (21). S. 269–272. [from Russian]

2. Bekoeva M.I. Bezopasnaya obrazovatelnaya sreda kak faktor uspeshnoy poznavatelnoy deyatelnosti studentov //Baltiyskiy gumanitarniy jurnal. 2017. T. 6. № 4 (21). S. 259–261. [from Russian]

3. Ziryanova U.V., Rodnina M.V. Rol simulyatsionnogo obucheniya v sisteme dopolnitelnogo meditsinskogo obrazovaniya // Innovatsionnie podxodi v sovremennoy nauke: sb. st. po materialam XCI Mejdunarodnoy nauchno-prakticheskoy konferentsii «Innovatsionnie podxodi v sovremennoy nauke». – № 7(91). – M., Izd. «Internauka», 2021. [from Russian]

4. Pojarskaya A.V. Usloviya formirovaniya esteticheskogo mirovospriyatiya podrostkov v obrazovatelnoy praktike //Baltiyskiy gumanitarniy jurnal. 2017. T. 6. № 3 (20). S. 248–251. [from Russian]

5. Surmach Ye.M. Simulyatsionnie texnologii v meditsinskom obrazovanii: planirovanie i perspektivi razvitiya //Jurnal Grodnenskogo gosudarstvennogo meditsinskogo universiteta. 2020. № 1 (18). C. 79–84. [from Russian]

6. Tishkov D.S. Simulyatsionnoe obuchenie kak effektivniy metod prakticheskoy podgotovki // Karelian Scientific Journal. 2020. T. 9. № 2(31), S.22-24. [from Russian]

7. Tuychiev L.N., Xalmatova B.T. Rol simulyatsionnogo obrazovaniya v podgotovke vrachey obshey praktiki //Vestnik Tashkentskoy meditsinskoy akademii -2018 №2 – s.2-7. [from Russian]

8. Khalmatova B. T. et al. The role of modern immitation educational technologies in improving quality //Journal of Positive School Psychology. – 2022. – C. 7203–7208-7203–7208.

9. Hallikainen H., Randell T et al. Teaching anesthesia induction to medical students: comparison beyween full-scale simulation and supervised teaching in the operating theatre //Europ. J.Anaesth-2009. -vol.26 –p.101-104

10. Okuda Y., Bond W., Bonfante G. et al. National growth in simulation training within emergency medicine residency programs, 2003-2008 //acad. Emerg. Med -2008.-vol.15-p.1113-1116

11. Penman J., & Oliver, M. Meeting the challenges of assessing clinical placement venues in a Bachelor of Nursing program //Journal of University Teaching & Learning Practice, 2017, P.60–73.

12. Shadmanov, A., & Okhunov, A. (2023). Translational Medicine: A New Way from Experimental Laboratory to Clinical Practice. Journal of Education and Scientific Medicine, (1), 2-7. Retrieved from https://journals.tma.uz/index.php/jesm/article/view/282

13. Okhunov, A., Khudaiberganova, N., Kasimov, U., Atakov, S., Bobabekov, A., Boboev, K., & Abdurakhmanov, F. (2023). Optimization of the Educational Process at the Department of General Surgery. Journal of Education and Scientific Medicine, (1), 98-101. Retrieved from https://journals.tma.uz/index.php/jesm/article/view/303

14. Okhunov, A. (2022). SMART TEXTBOOK: a New Level in the Modern Educational Process. Journal of Education and Scientific Medicine, 2(3), 11-18. Retrieved from https://journals.tma.uz/index.php/jesm/article/view/337

15. Shadmanov, A., & Okhunov, A. (2022). Recommendations For the Organization of Distance Education on the Example of the Use of Electronic Books. Journal of Education and Scientific Medicine, 2(3), 7-10. Retrieved from https://journals.tma.uz/index.php/jesm/article/view/336

16. Bobobekov, A., & Bobokulova, S. (2022). History Of Simulations for Medical Education. Journal of Education and Scientific Medicine, 2(3), 22-24. Retrieved from https://journals.tma.uz/index.php/jesm/article/view/340

17. Shadmanov, M. (2022). The Effectiveness of The Use of Pedagogical Technologies in Teaching Urological Subjects. Journal of Education and Scientific Medicine, 2(3), 40-42. Retrieved from https://journals.tma.uz/index.php/jesm/article/view/365

SIMULYATSION O‘QITISH VA UNING TIBBIY TA’LIM SIFATINI OSHIRISHDAGI O‘RNI

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Abstrakt.

Maqolada O‘zbekiston Respublikasi Toshkent tibbiyot akademiyasi va Andijon Davlat tibbiyot instituti bazasida simulatsion ta’limtexnologiyalarini qo‘llash natijalari keltirilgan. Uzluksiz tibbiy ta’limning barcha bosqichlarida tibbiy kadrlarni tayyorlash bo‘yicha o‘quv jarayoniga csimulyatsiono‘qitishni joriy etish shifokor xatolarini, asoratlarni kamaytirish va aholiga tibbiy yordam ko‘rsatish sifatini oshirishga yordam beradi.

Kalit so‘zlar: simulatsion trening, simulatsion o‘q itish texnologiyalari, uzluksiz tibbiy ta’lim

СИМУЛЯЦИОННОЕ ОБУЧЕНИЕ И ЕГО РОЛЬ В ПОВЫШЕНИЕ КАЧЕСТВА МЕДИЦИНСКОГО ОБРАЗОВАНИЯ

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Абстракт.

В статье представлены результаты применения имитационных образовательных технологий на базе Ташкентской медицинской академии и Андижанского медицинского института Республики Узбекистан. Внедрение обучающих имитационных курсов в образовательный процесс подготовки медицинского персонала на всех этапах непрерывного медицинского образования будет способствовать сокращению врачебных ошибок, уменьшению осложнений и повышению качества медицинской помощи населению.

Ключевые слова: симуляционый тренинг, технологии симуляционного обучения, непрерывное медицинское образование