

OVERVIEW OF SIMULATION TEACHING METHODS IN GRADUATE STUDENTS EDUCATION

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Simulation training (from Latin *simulatio* — imitation, pretending) is a modern technology of acquiring practical skills, abilities, and knowledge based on the simulation of any physical process using an artificial (e.g., mechanical or computer) system. Improving medical skills using mannequins, simulators, and standardised patients has been the «gold standard» of medical education in developed countries for over 10 years [1].

The goals of simulation training are the following:

- development, improvement and practical application of experience in communication or practical skills (resuscitation, intubation, etc.);
- ability to see the shortcomings of the process and miscommunication in the work of the medical team;
- formation of the ability to identify practical skills, communication skills, stages of the algorithm of medical care that need improvement;
- practical understanding of the roles and principles of teamwork [2].

There are two types of simulation training, depending on where the activity is conducted. In situ simulation (Latin — 'on the spot') is a lesson or other application of simulation techniques in the workplace, in the actual clinical environment whose participants are on-duty clinical providers during their actual workday. In situ simulation can be performed both in treatment and prevention facilities and on worksites, landfills and enterprises with harmful and dangerous working conditions to train rescuers and medical workers. Unlike ex situ simulation, it is more about training outside the clinic, on the basis of a simulation centre, where classes are conducted in a simulated, artificial environment.

Types of simulation techniques, according to T. Hrytsun, are:

- computerised mannequins, screen simulators (allow to simulate the corresponding reaction);
- anatomical models are used to teach particular skills and abilities;
- phantom is a model of a person or part of it in its actual size, replacing the original, which retains only some of its essential properties (contributes to the formation of a system of interrelated skills);

— mannequin is a figure on which you can form a system of interrelated skills;

— simulator is a device for artificial creation (imitation) of various situations or objects, which allows you to develop individual skills and abilities;

— standardised patients;

— a system of situational tasks;

— educational games of clinical type (allow to form skills of clinical thinking);

— educational games of organisational and activity type (contribute to the formation of professional and organisational skills) [3].

The primary forms of simulation training are:

— master classes;

— multidisciplinary training;

— team classes (team training);

— competitions;

— discussion;

— role and business games;

— «standardised patient» [4].

While studying at a medical institution, students often experience a lack of practical training. The number of obstacles for creating working conditions for students is the inability to reproduce most of the experimental manipulations, the lack of thematic patients, deontological, moral, ethical and legal limitations in the relationship between students and patients. In order to increase the level of practical training of future doctors, more and more time is devoted to working in simulation centres. The advantages of such training are:

- clinical experience in a virtual environment without risk to the patient;
- reduced stress during the first independent manipulations;
- unlimited number of repetitions to practice skills;
- practice of actions in rare and life-threatening pathologies;
- training takes place regardless of the clinic's work schedule;
- part of the functions of the teacher takes over the virtual simulator;
- development of both individual skills and abilities of team interaction;
- objective assessment of the achieved level of skill [5].

Simulation training is not a panacea for all the problems that arise in training a future specialist. All in all, each method has both advantages and disadvantages.

The main disadvantage of this method is the high cost. Equally significant is the shortage of qualified doctors who know how to work in a simulation centre, correctly teach the material and evaluate students. There is an immediate need to

separate the specialist from clinical activities for teaching in such centres. There are also difficulties scheduling classes for a reasonably large number of students, overloading the simulation centre with students who have to practice practical skills in simulation classes. Other issues include the creation of a regulatory framework and developing and implementing educational and methodological material in the educational process. [6]

Conclusion. Despite the number of problems in simulation training, this approach can significantly improve future doctors' practical training, allowing them to repeatedly practice skills. Such classes can reduce stress, offering direct manipulation in real-life conditions. Enhancing and expanding this area of training will create conditions for increasing the competitiveness of Ukrainian students, young professionals, and working doctors in Europe and worldwide.

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