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EDUCATIONAL AND PSYCHOLOGICAL PROPERTIES OF SIMULATIONS IN MEDICAL EDUCATION

Mirakbarov M.M.
Tashkent State Medical University
Academic Supervisor: **Shoyimova Sh.S.**
Head of the Department of Social Sciences, Pedagogy, and Psychology, Tashkent State Medical University, Doctor of Psychology (DSc), Professor
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Abstract. In recent years, the integration of simulation-based learning strategies in medical education has gained substantial traction. This article explores the pedagogical and psychological properties of simulations, emphasizing their effectiveness in enhancing medical training outcomes. By examining various simulation modalities, this study highlights the importance of immersive, experiential learning environments that foster critical thinking, collaboration, and patient-centered care among medical professionals.

Key words: simulations, medical education, psychological aspects, pedagogical possibilities, stress resistance.

Introduction. The evolution of medical education necessitates innovative teaching methodologies that prepare students for real-world clinical challenges. Simulation-based learning (SBL) has emerged as a vital pedagogical tool, allowing for safe, controlled environments where learners can practice and refine their clinical skills. This article discusses the educational frameworks supporting simulation-based learning and its psychological impact on learners. Pedagogical Properties of Simulations

1. **Active Learning**: Simulations engage learners actively, transitioning them from passive recipients of information to active participants. This hands-on approach promotes deeper understanding and retention of knowledge.

2. **Clinical Skills Development**: Simulations provide a platform for learners to practice clinical procedures without the risk of harming real patients. This practical exposure is essential for developing competence and confidence.

3. **Interprofessional Education**: Simulations foster collaboration among different healthcare disciplines, nurturing teamwork skills essential in clinical settings. Interprofessional simulations can help dismantle professional silos and enhance communication.

4. **Immediate Feedback**: Simulations often include debriefing sessions where learners receive constructive feedback, allowing for reflection and self-assessment. This metacognitive practice is crucial for personal and professional development.

Psychological Properties of Simulations

1. **Reduced Anxiety**: Simulations afford a safe space for students to experience the pressures of clinical situations without the fear of real-life consequences. This environment can reduce anxiety and build resilience.

2. **Increased Self-Efficacy**: Engaging in simulations leads to improved self-efficacy among learners. As students practice and master skills, their confidence in their abilities grows, positively influencing their performance in clinical settings.

3. **Motivation and Engagement**: The interactive and dynamic nature of simulations enhances learner motivation. Participants tend to show increased enthusiasm for learning when engaged in realistic scenarios that mimic actual patient interactions.

4. **Emotional Intelligence**: Simulation training can enhance emotional intelligence among medical professionals by allowing them to navigate complex interpersonal scenarios, such as delivering bad news or handling difficult patient interactions, in a controlled setting.

Examples of Application in Education. Simulations play a vital role in medical education, allowing students and medical professionals to practice skills in a safe environment, developing critical thinking and confidence before encountering real patients. Below are several examples of successful use of simulations in medical schools: Many medical schools, such as Harvard Medical School and Johns Hopkins University, are establishing simulation centers where students can practice clinical skills using mannequins and recreated scenarios. These centers offer simulations of various situations, including medical emergencies, anesthesia, and surgical procedures. At the University of Michigan, medical students regularly participate in simulations as part of their educational program. For example, simulations of complex case management scenarios help residents develop decision-making skills under stress. The Interprofessional Education (IPE) program at the University of North Carolina includes simulations that allow students from different specialties (nurses, physicians, pharmacists) to work together to solve clinical cases. This helps develop teamwork and an understanding of each other's roles in medical practice. Some schools are beginning to use VR technology for simulations. For example, California State University uses VR scenarios for psychiatry training, allowing students to interact with virtual patients and practice assessment and diagnosis. Disaster and emergency medicine simulations conducted at medical schools such as University College London allow students to practice realistic teamwork during mass disasters. Students learn to work with limited resources and make quick decisions. As part of the simulation program at the University of Florida, students complete various clinical tasks, which are then evaluated by faculty and peers. This allows for constructive feedback, which is important for further professional development. The use of "simulated patients"—actors playing the roles of patients with various illnesses, as at the University of Washington—helps students practice conducting clinical interviews, adhering to ethical standards, and learning communication skills.

Challenges and Future Directions. While simulation-based learning offers numerous advantages, challenges remain, including the need for adequate resources, trained faculty, and support for integration into curricula. Future research should focus on long-term impacts of simulation training on clinical practice and methods to standardize assessment criteria for simulation effectiveness.

Conclusion. Simulation in medical education embodies a powerful pedagogical approach that enhances both educational outcomes and psychological readiness for clinical practice. By embracing simulation-based learning, medical institutions can prepare future healthcare providers for the complexities of patient care in an increasingly challenging environment.

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