

psychological and emotional components of clinical training in the context of the digital transformation of medical education.

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WAYS TO OPTIMIZE FIRST AID SIMULATION TRAINING BASED ON THE RESULTS OF A SURVEY OF FIRST-YEAR STUDENTS IN 2024–2026

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Abstract. An anonymous survey of first-year students was conducted following the completion of the “First Aid” course. A high level of motivation to learn practical skills was identified, and avenues for improving practical training in the discipline were noted.

Scientific specialty: 3.2.3. Public Health and Health Care Organization, Sociology and History of Medicine.

Relevance

The “First Aid” course in the first year of medical school is an important foundation for developing basic life-support skills. Most first-year students demonstrate a high level of motivation to learn practical skills, while also experiencing cognitive and emotional difficulties due to their adjustment to university life. Continuous monitoring of first-year students’ opinions makes it possible to continually optimize the teaching of first aid skills.

Objective

To analyze first-year students’ perceptions of the “First Aid” course in the Faculties of Medicine and Pediatrics.

Materials and Methods

An anonymous survey was conducted among 514 first-year students (189 students from the Faculty of Medicine and 79 from the Faculty of Pediatrics in the 2024–2025 academic year, 133 and 113 students from the respective faculties in the 2025–2026 academic year) after the completion of “First Aid” classes at the Simulation and Assessment Center for Higher Education at BSMU. Descriptive statistical methods were used.

Results

Between 45.5% and 60.2% of respondents consider it important to increase the number of practical sessions at the SAC HE. Between 75.2% and 87.3% of the first-year students surveyed cited increased time spent on simulators as the main factor in improving the effectiveness of learning. At the same time, hands-on skill practice continues to rank first among learning methods (86.7% to 93.7% of respondents) along with watching thematic videos (57.1% to 73.4% of respondents).

Videos created by staff at the Higher Education Support Center were recognized as highly effective for mastering practical skills: between 70.9% and 91.2% of respondents rated them 9 or 10 out of 10 on a 10-point scale.

Students cited cognitive overload — memorizing large

amounts of new information — as the main difficulty in mastering the course (ranging from 43.6% to 59.5% of respondents).

Conclusions

1. First-year students consistently expressed a desire for more time dedicated to hands-on practice of practical skills within the structure of practical classes.
2. Visual digital educational materials, particularly videos created by instructors at the Higher Education Center for Advanced Studies, are recognized by students as the most effective for mastering practical skills.
3. Important ways to optimize first aid practical sessions at the Higher Education Simulation Center include increasing the proportion of time spent directly working with simulation equipment, expanding interactive methods for analyzing scenario-based tasks, and further developing and improving instructional video materials.

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MODERN APPROACHES TO TEACHING “BIOCHEMISTRY” IN THE BASIC MEDICAL EDUCATION SYSTEM

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Abstract. Biochemistry serves as the foundation of modern medicine, providing an understanding of the molecular mechanisms underlying the functioning of a healthy organism, pathogenesis, diagnosis, and the development of targeted therapies for diseases. The rapid development of analytical technologies and the identification of new biomarkers require future specialists to be able to interpret complex pathochemical shifts. In this regard, teaching this discipline requires not only the acquisition of a fundamental body of knowledge but also adaptation to the needs of the current generation of medical students.

Academic Specialization: 3.2.3. Public Health and Health Care Organization, Sociology, and History of Medicine.

Relevance

Biochemistry is of fundamental importance to medicine. It is essential for maintaining health, as well as for the prevention, diagnosis, and treatment of diseases. The relationship between biochemistry and other biomedical and clinical disciplines is dynamic and mutually enriching. The study of biochemical mechanisms plays a vital role in identifying the root causes of diseases and in the targeted development of treatments and therapeutic methods. At the same time, the study of diseases often opens new horizons for research into biochemical processes. Thanks to the continuous development of physicochemical analytical technologies, the ability to identify biomarkers, detect metabolic changes, and uncover complex intracellular interactions, the discipline can contribute to the development of new, effective diagnostic tools and targeted therapies. Modern biomedical disciplines are essential for the well-rounded development of medical students and help

them understand the significance of the knowledge they acquire for their future professional practice.

Objective

To analyze the role of the discipline “Biochemistry” and the application of various teaching methods for this subject within the system of basic medical education.

Materials and Methods

This study utilized English-language articles, publications, and standards available on the Internet, as well as descriptions of educational programs at medical universities in 46 countries.

Results

The teaching of “Biochemistry” is an important component of the higher medical education system. A solid grasp of biochemistry is essential for medical students, as without it, it is difficult to effectively master other medical-biological and clinical disciplines. Since knowledge of biochemistry is essential for diagnosing diseases, a modern physician must be able to interpret vital processes in a healthy body and under various pathological conditions, as well as diagnose diseases based on the results of conducted tests. The results of studying biochemical, pathological, and molecular biological processes in pathology can be used by physicians to confirm a diagnosis.

Due to the complexity of the subject, some medical students lose interest in biochemistry during their studies, which negatively affects their academic performance. Currently, leading medical universities employ a range of modern teaching methods, such as group work, interactive lectures and seminars, e-learning and virtual tools, the use of online platforms, the “flipped classroom,” laboratory workshops, project-based and task-oriented learning, as well as problem-based and simulation-based learning.

Discussion

Since biochemistry serves as the foundation for other fundamental preclinical biomedical disciplines that are essential for effective diagnosis, treatment, and prevention, it is rarely taught in isolation today. Biochemistry is a modern biomedical science with a distinctly interdisciplinary nature that can be integrated with histology, physiology, pathology, pharmacology, and clinical medicine, emphasizing the importance of molecular processes in both normal and pathological conditions. Consequently, the teaching of this discipline must be as effective as possible. However, students often struggle to master this subject due to the breadth of its content, the complexity of conceptual understanding, and their tendency to rely on rote memorization. This is directly linked to the need to memorize a large volume of theoretical information, particularly the highly complex reactions of the metabolic pathway and the establishment of metabolic relationships between biochemical processes. Challenges may also stem from the specific nature of the discipline and its interdisciplinary character, which requires in-depth knowledge of other biomedical subjects. Today’s students expect pedagogical diversity, flexibility, responsiveness, and effectiveness; they are tech-savvy and value the abil-

ity to control the pace of their learning.

When teaching biochemistry, it is essential to pay special attention to combining theory and practice, to develop typical situational problems, to set appropriate educational objectives, to inspire students to reflect on problems, and to develop their critical thinking, cognitive analysis, and synthesis skills.

At the Faculty of General Medicine of Yerevan State Medical University named after M. Geratsi, the course “Biochemistry” is integrated with related disciplines (physiology and histology) within a modular curriculum. This teaching model allows for the systematic study of related subjects within unified modules, which deepens understanding of the material, fosters cause-and-effect thinking, promotes the development of clinical case analysis skills, encourages self-directed learning, and accelerates the development of clinical reasoning. The modularization of the curriculum for the “General Medicine” educational program has contributed to improved academic performance and increased satisfaction among medical students with regard to biomedical disciplines.

Conclusions

At the stage of basic medical education, the “Biochemistry” course helps future physicians understand the pathological foundations of disease mechanisms, providing an opportunity to develop new and more effective methods and tools for diagnosing and treating pathologies. Teaching this course requires a combination of traditional teaching methods and modern, cutting-edge educational simulation technologies. The modularization of the educational program’s curriculum has a positive impact on academic performance and student satisfaction. The use of a wide range of teaching methods, approaches, and formats, combined with modularization, improves the quality of education and contributes to the development of necessary professional competencies.

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FIVE YEARS OF ACCREDITATION AT THE REGIONAL LEVEL: RESULTS, FACTORS OF FAILURE, AND RESOURCES

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Abstract. This study analyzed 4,068 primary and primary specialized accreditation procedures conducted at Yaroslavl State Medical University during the summer accreditation campaigns of 2022–2026. The proportion of applicants who failed to pass accreditation rose from 2.3% to 5.0% by 2025, then decreased to 2.7% in 2026. The main predictors of failure were: age over 30, male gender, low test scores, and retaking the test. Two-thirds of those who dropped out did not exhaust their three attempts. Failures on the Unified State Exam (OSCE) are clustered according to the timing of the introduction of new elements into the procedure. The site’s resource model and the monitoring of assessment quality are discussed.