THE ROLE OF CLINICAL-SITUATIONAL LEARNING IN DEVELOPING CLINICAL THINKING AND PROFESSIONAL COMPETENCIES OF MEDICAL STUDENTS

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Modern medical education is aimed at training highly qualified specialists capable of making independent clinical decisions within a rapidly evolving healthcare system. According to the competency-based approach, a graduate of a medical university should possess not only fundamental theoretical knowledge but also the skills required for its practical application in real clinical settings [1]. An innovative and technology-oriented approach to the educational process is an essential prerequisite for ensuring the high quality of higher medical education. The primary objective of professional medical education is to train qualified specialists of an appropriate level and profile who are competitive in the labor market, professionally competent, proficient in their field, knowledgeable in related areas of activity, and prepared for continuous professional development, as well as social and professional mobility.

The aim of this study is to adapt one of the educational technologies and implement it in medical education during the teaching of Clinical Pharmacology.

One of the key objectives of teaching Clinical Pharmacology is to develop students' ability to select rational drug therapy while taking into account individual patient characteristics, comorbidities, potential drug interactions, and the principles of evidence-based medicine [2]. In this regard, the introduction of interactive educational technologies is becoming increasingly important, with clinical case-based learning occupying a central role.

Clinical case scenarios in internal medicine are an essential component of both the educational and assessment processes, including the state interdisciplinary certification of graduates. The focus on this form of learning is explained by its ability not only to assess knowledge but also to develop important professional competencies of future physicians, such as the qualified analysis of patient information, diagnosis, planning of additional examinations, and selection of appropriate treatment strategies. Solving clinical case scenarios has been used for many years as a form of problem-based learning [3]. Clinical cases presented in the form of patient scenarios accompanied by questions and explanations are widely used both in teaching and in knowledge assessment. Many educational resources for medical students and postgraduate physicians are based on this format.

The faculty members of our department actively use clinical case scenarios that closely reflect real clinical practice. Each case represents a specific clinical situation and includes concise medical history data, findings of physical examination, laboratory and

instrumental investigation results, and, when necessary, illustrative materials and descriptions of changes in the patient's condition. Solving such clinical cases contributes significantly to the development of students' clinical reasoning skills.

The implementation of these tasks promotes independent student work, continuous analysis of clinical situations, development of medical decision-making skills, planning of additional diagnostic procedures, and involvement of consultants when necessary. For each question, the instructor provides detailed feedback explaining both correct and incorrect answers, as well as the reasons underlying common mistakes. In the process of educational goal-setting, the teacher plays a crucial role by formulating learning objectives, defining and clarifying tasks, recommending key literature sources, monitoring students' progress, and providing guidance and correction. This approach fosters cooperation and professional interaction between students and instructors.

This method of presenting clinical scenarios enables the systematic development of clinical reasoning at every stage and allows the diagnostic process to be viewed as a continuous search for truth within a dynamically changing clinical situation. Various illustrative materials are incorporated into the cases, including radiographic images, echocardiographic findings, multislice computed tomography scans, and video recordings of contrast-enhanced diagnostic procedures. These materials help students develop skills in analysis, interpretation, and integration of clinical information. Such an approach contributes to the formation of one of the most important professional competencies—the ability to utilize modern laboratory and instrumental diagnostic methods.

In the educational setting, clinical case scenarios invariably become the subject of group discussion [4]. When necessary, they can be transformed into role-playing exercises or debates focused on specific clinical issues. The use of this educational technology enhances the clarity, informativeness, and interactivity of the learning process. It also provides instructors with the opportunity to assess students' understanding, identify common errors, and devote additional attention to topics that cause difficulties. In international medical education practice, the case-study method is regarded as one of the most effective tools for training healthcare professionals because it allows the simulation of real clinical situations and promotes the development of clinical reasoning, analytical thinking, and decision-making skills [5]. Problem situations are usually based on real patient histories. The analysis of clinical cases requires a deeper understanding of the disease, including knowledge of specific nosological forms, diagnostic methods, differential diagnosis, and rational treatment approaches. As a result, students are encouraged to consult additional literature and independently search for relevant illustrative materials.

Case-based learning represents an active learning method based on the analysis of a specific clinical situation. Students are provided with a patient history including

medical history, physical examination findings, laboratory test results, and instrumental diagnostic data. Based on the available information, learners are expected to establish a diagnosis, determine an appropriate diagnostic strategy, and select rational pharmacotherapy. Unlike traditional teaching methods, the case-study approach stimulates independent cognitive activity and promotes the development of critical thinking skills. During case discussions, students learn to justify their opinions, evaluate alternative treatment options, and apply current clinical guidelines in practice.

Many years of experience with the use of clinical case scenarios have demonstrated that this educational method significantly improves students' level of training. Learners show better comprehension of educational material, demonstrate greater familiarity with clinical guidelines, and more confidently apply their knowledge during practical classes.

Case-based learning contributes to the development of the following professional competencies: collection and analysis of clinical information; interpretation of laboratory and instrumental investigation results; differential diagnosis; selection of rational pharmacotherapy; assessment of treatment efficacy and safety; use of clinical guidelines and evidence-based medicine resources; and interdisciplinary collaboration skills. Furthermore, this educational technology promotes the development of communication skills, teamwork abilities, and decision-making under time constraints, all of which are essential for future medical practice.

Thus, the use of clinical case-based learning in the teaching of Clinical Pharmacology represents an effective tool for developing clinical reasoning and professional competencies among medical students. The analysis of real clinical cases facilitates the integration of theoretical knowledge and practical skills, promotes independent learning and critical thinking, and enhances students' ability to make evidence-based clinical decisions. The implementation of modern educational technologies based on the case-study method contributes to improving the quality of medical education and ensures that future physicians meet the contemporary requirements of healthcare systems and evidence-based medical practice.

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