

**INTEGRATED AND INNOVATIVE APPROACH
TO THE STUDY OF THE SUBJECT «CARDIOLOGY»
AT HIGHER MEDICAL INSTITUTIONS**

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The active development of cardiology specified by the introduction of non-invasive and invasive informative diagnostic methods and numerous recommendations for treatment and prevention of cardiovascular diseases requires the training of a highly organized cardiologist. The purpose of this process is to educate a student who both has classical clinical analytical thinking and is well oriented in a great amount of information of modern laboratory and instrumental methods of examination and treatment [3, p. 455].

It is known that the student's intrinsic motivation and the teacher's art are important for successful mastering of any subject. There is such an undeniable triad as teacher – subject – student. The level of the teacher's art and the studied subject of the discipline along with the student's intrinsic motivation determine the final result. Taking into consideration continuous improvement of the quality of teaching,

modern training plans and programs, training developments (teaching and guiding) the most important task is to stimulate students' intrinsic motivation for the quality of discipline mastering [1, p. 10; 2, p. 16].

The introduction of innovative methods is one of the motivating components for a student along with the classical training «at the patient's bedside» both independently and together with a teacher [6, p. 236]. An interactive version of it can be «work in small groups – teams (TBL – teambased learning)» that is the students' collaborative activity in a group under the teacher's leadership aimed at solving a common problem by creative adding of the results of the individual work of the team members with the distribution of powers and responsibilities [7, p. 369]. Against this background the practical skills of the patient's objective examination become perfect and a plan for further patient management is made in accordance with the diagnosis.

In the process of training the students participate in a number of medical manipulations: they measure blood pressure, record and decode electrocardiograms (ECG) on their own, they are present during performing bicycle ergometry, electrical cardioversion in atrial fibrillation and fluttering and they monitor emergency care for the patients with myocardial infarction, pulmonary edema, rhythm and conduction disturbances in the intensive care unit. Much attention is paid to modern diagnostic and medical technologies. The students get acquainted with the indications for percutaneous coronary intervention (coronary angioventriculography (CVG) and subsequent stenting) and coronary artery bypass grafting, implanting a temporary and permanent artificial pacemaker, cardioverter-defibrillator.

Diagnostic and therapeutic algorithms for assisting the patients in emergency situations in cardiology (hypertensive crises, myocardial infarction, pulmonary edema, cardiogenic shock, paroxysmal tachycardia, cardiac conduction disturbances), the groups of the drugs with the principles of their administration along with their indications, contraindications and side effects are analyzed at each lesson.

The training videos on the methods of the cardiological patient's objective examination (measuring blood pressure, taking pulse properties, etc.), emergency cardiology (conducting cardiopulmonary

resuscitation, defibrillation, etc.), functional diagnostics (recording ECG, Holter monitoring ECG), a technique for performing minimally invasive diagnostic and therapeutic procedures (transesophageal cardiac pacing, electrical cardioversion, CVG, etc.) are widely used during the practical classes. In case there is a limited ability to select the patients with a rare or infrequent pathology (infectious endocarditis, congenital heart disease in adults, pericardial damage, some types of cardiomyopathies) according to the topic of the lesson electronic visual aids (virtual patients) are used including the data from clinical and additional laboratory and instrumental study (biochemical blood tests, lipidograms, ECG, radiographs, angiograms, computed tomograms, the results of an echocardiographic study, etc.), computer multimedia training programs with self-control of knowledge that is especially important in the self-preparation for the topic of the lesson. It should be noted that the student gains professional knowledge, skills and abilities in addition to a variety of sources (textbooks, lectures, monographs, the Internet, etc.) by working at the patient's bedside, participating in clinical trials, consultations, clinical and clinics-pathological conferences [9].

The control of knowledge level for mastering the material and necessary skills of the subject structure «Cardiology» is monitored in the classroom every day. For this purpose we use test tasks to assess practical skills including clinical analysis of the patient with cardiovascular pathology, making a differential diagnosis, determining the examination plan, interpreting the results of laboratory and instrumental studies, drawing up a patient treatment regimen taking into account generally accepted standards and recommendations. Current and midterm test controls allow to assess the performance objectively [5, p. 85].

We also widely use other elements of innovative approaches to stimulate the motivating component. It allows you to implement the student's personality-competency-based properties in such triad as teacher – subject – student. One of the ways to achieve this goal is to use the case method. The case-studies method (CBL – case-based learning) is an active problem-situational analysis that is presented as training by solving specific tasks-situations (cases) with various pathologies, including emergency cardiology using ECG sets [4, 1124]. After being

divided into several subgroups the students are offered to do a thematic crossword puzzle to test «survival» (acquired) knowledge obtained in the process of studying the subject «Cardiology» that creates a certain incentive for competition and the excitement of victory. The method of role-playing games (RPG) with the imitation of a real situation (a patient – a cardiologist) is widely used. We model the situations in the classroom that are as close as possible to the student's future professional activities. For example, they are the doctor's tactics for acute coronary syndrome at the prehospital and hospital stages, arresting of anquinous attack, paroxysmal tachycardia, hypertensive crisis, etc [10, p. 40].

An integrated approach along with the interactive methods allow you to gain the experience of the students' creative and innovative activities which eventually affects the competence of a future specialist [8, p. 82].

The use of traditional and innovative teaching methods and forms that complement each other helps to improve the quality and effectiveness of education. The emphasis on active teaching methods and a person-competency-based approach helps to implement a successful search for solutions in diverse, non-standard situations by preparing a future specialist for work.

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