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INTEGRATIVE APPROACH TO TEACHING CARDIOLOGY: ISSUES OF RELATIONSHIP WITH OTHER SPHERES OF MEDICINE

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Abstract
This article explores the methodological and practical foundations of teaching cardiology through an integrative approach in connection with other medical fields. Teaching cardiology in relation to endocrinology, neurology, nephrology, and pharmacology plays a significant role in developing students' systematic and professional thinking. The article highlights the advantages of the integrative method, its practical application, and outcomes based on students' feedback.

Keywords: Cardiology, integrative approach, medical education, interdisciplinary connection, student feedback, clinical knowledge.

Introduction

In recent years, the need for a training system based on interdisciplinary integration in the field of medical education has been growing. Especially in conditions of high statistics of cardiovascular diseases, comprehensive and comprehensive teaching of cardiology is of great importance. In this process, an integrative approach plays an important role - that is, cardiology should be taught in connection with such areas as endocrinology, nephrology, neurology,

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pharmacology. This approach forms the skills of clinical thinking, systematic analysis, diagnostic and therapeutic decision-making in students.

In the modern medical education system, an approach based on interdisciplinary integration plays an important role in the comprehensive professional training of specialists. Especially in the teaching of cardiology, which is one of the clinical disciplines, this approach forms the skills of complex clinical thinking, analysis and objective decision-making in students.

Cardiology encompasses not only knowledge of the cardiovascular system, but is also closely related to such fields as endocrinology, neurology, nephrology, and hematology. Therefore, this article discusses the need to introduce an integrative approach to teaching cardiology, interdisciplinary connections, and the problems associated with them. Integrative education is an interdisciplinary approach, the main goal of which is to form a comprehensive knowledge base within one discipline by supplementing knowledge related to other fields. In cardiology, there are conditions that are closely related to the endocrine system (for example, diabetic cardiomyopathy), nephrological diseases (load on the heart due to renal failure), and neurological complications (stroke and heart rhythm disorders). Such situations indicate the need to theoretically substantiate interdisciplinary connections.

1 interdisciplinary connections in cardiology in the table

1. Table Issues of connections with other fields in the teaching of cardiology.

№	Related science	Integration Points	Examples
1	Endocrinology	The Relationship Between the Heart and Diabetes	Diabetic cardiomyopathy
2	Neurology	Myocardial Ischemia and Stroke	Cardiac disorders of cerebral circulation
3	Nephrology	Hypertension and Renal Failure	Nephrogenic hypertension
4	Pharmacology	The Effects of Cardiological Drugs	Beta-blockers, APF inhibitors
5	Pulmonology	The Relationship Between the Cardiopulmonary System	Pulmonary hypertension

The implementation of an integrative approach to teaching cardiology has been practiced in the international medical education system for many years. In

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particular, through multidisciplinary and interdisciplinary teaching methods, case-based learning systems, and simulation learning environments, the aim is to develop students' ability to analyze complex clinical situations, develop systemic thinking, and form interprofessional cooperation. The experience of leading countries of the world is analyzed below.

The experience of Harvard Medical School plays an important role in organizing integrative medical education in the USA. At Harvard, it has become a tradition to teach cardiology in conjunction with endocrinology, nephrology, pharmacology, and psychology within the framework of a course called the "Integrated Cardiovascular Curriculum". In these courses, students learn the "multi-organ approach" (i.e., the connection between several systems at the same time) through clinical scenarios (Green & Roberts, 2019). For example, in the case "Diabetic Patient with Heart Failure", the heart, kidney, and endocrine systems are analyzed together.

Stanford University has "Clinical Integration Blocks" for students, in which several specialists participate in each complex case: a cardiologist, an endocrinologist, and a psychotherapist. This not only ensures interdisciplinary connections, but also forms a multidisciplinary approach in students.

Medical education in Germany is based on a credit-module system. The universities of Tübingen and Heidelberg have integrative modules called "Cardio-Renal-Endocrine Systems". In them, students study the functional connections between the heart and kidneys based on physical examinations, laboratory results, and ECG analysis. Modern simulation technologies and virtual patient platforms (for example, BodyInteract) are widely used.

In Germany, medical ethics and professional communication skills are also taught integratively. In this process, aspects of cardiology related to the human psychological state are also in the spotlight.

In South Korea, an interdisciplinary approach to medical education has been established at the level of state policy. Seoul National University has introduced "Integrated Simulation-Based Modules" in medical education, which connect cardiology not only with other disciplines, but also with practitioners.

During such simulations, students work at all stages from patient admission to diagnosis and treatment. For example, cardiac arrhythmia and the subsequent cerebrovascular accident (stroke) are taught simultaneously. This is a clear example of teaching interdisciplinary connections in practice.

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The South Korean Ministry of Health has also developed a special rating system for the Integrative Curriculum. This system assesses the level of interdisciplinary education at each medical university.

In the UK, interdisciplinary integration is mainly carried out through the PBL (Problem-Based Learning) method. At the universities of Oxford and Cambridge, cardiology is taught in conjunction with other disciplines, inseparably from each other.

In PBL-based education, students work together on a patient's history. For example, in the case study "Elderly patient with hypertension, diabetes and chronic kidney disease", they simultaneously analyze the issues of heart, kidney, diabetes and pharmacotherapy. This method develops the students' capacity for analysis, critical thinking and interprofessional cooperation.

In recent years, interdisciplinary courses called "Integrative Clinical Modules" have been introduced at Ankara and Istanbul Universities in Turkey. Through them, the analysis of cardiovascular diseases from a nephrological, endocrinological and even hematological perspective is widely implemented.

According to Turkish professors, an interdisciplinary approach develops the ability of graduating doctors to find realistic solutions to complex clinical situations. Also, "Cross-System Disease Pathways" trainings are held for students in simulation centers, where the pathogenesis and diagnostics of several diseases are discussed simultaneously in one patient.

In conclusion, the experience of the above-mentioned countries shows that teaching cardiology in an interdisciplinary manner not only improves the quality of education, but also increases the maturity of specialists. In order to implement these experiences in the medical education system of Uzbekistan, it is necessary to revise curricula and textbooks, create simulation centers, and strengthen cooperation between specialists.

Teaching cardiology based on an integrative approach forms an interdisciplinary view, systemic thinking, and professional maturity in students. It is recommended to approach this process not only through a theoretical, but also through a practical approach, multidisciplinary seminars, and case studies.

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