DEVELOPING CLINICAL THINKING AS A PSYCHOLOGICAL AND PEDAGOGICAL PROBLEM

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Abstract: The development of clinical thinking in medical students is a significant psychological and pedagogical issue, particularly considering their future roles as physicians. This article discusses the importance of fostering clinical reasoning and its progression in medical students, emphasizing the foundational role it plays in diagnosing, treating, and predicting disease outcomes. Drawing on insights from renowned medical figures like S.P. Botkin, G.A. Zakharin, and M.P. Konchalovsky, clinical thinking is explored as a blend of knowledge, experience, and intuition. Furthermore, the modern medical education paradigm, which stresses the integration of knowledge, skills, and competencies, is highlighted. The article provides a simplified 5-stage approach to developing clinical thinking and identifies key aspects that future physicians must master, including observation, critical thinking, and adaptability.

Keywords:Clinical thinking, medical education, diagnosis, treatment, professional development, intuition, patient-centered care, pedagogy in medicine, diagnostic methods, clinical reasoning.

Developing the clinical thinking of medical university students is one of the critical topics, especially considering their future role as physicians. This is why it is necessary to address this subject in detail. The formation of clinical thinking among future doctors and their interest in developing it is progressing alongside the evolution of medicine. Prominent medical figures have expressed various thoughts on this matter. For example, S.P. Botkin stated, "If a student possesses clinical thinking, they will be able to work independently without difficulty." G.A. Zakharin noted, "A student who has mastered methods and skills can draw definitive conclusions in any situation." Moreover, clinician M.P. Konchalovsky emphasized, "A doctor must possess logical thinking, the ability to understand, comprehend, and remember."

Clinical thinking involves the ability to find qualified and creative solutions in diagnosis, treatment, and prognosis of diseases, based on knowledge, experience, and the doctor’s intuition. Higher medical education is advancing in preparing competitive and qualified specialists by following the "knowledge-skill-competency" paradigm. Given the rapid advancement of medicine, professors or clinical trainers must continuously encourage the development of students' clinical thinking, ensuring it

progresses to higher levels.

Creative and professional approaches to the diagnosis, treatment, and prognosis of diseases by future medical professionals are considered clinical thinking. Clinical thinking primarily relies on the knowledge, intuition, and experience of the healthcare provider. The development of clinical thinking is a long and arduous process that ultimately leads to high professionalism.

Clinical thinking (its content and nature) for future physicians is more complex than for other professions, as it requires an individualized approach to each patient. In providing an individual approach to a patient, factors such as:

- Genetics,
- Age,
- Constitution,
- Profession,
- Speech or other sensory organ disorders,
- Mental and emotional state, etc.,

All of these factors influence the clinical manifestation of diseases, helping the doctor gather anamnestic information.

During their practice, specialists should aim to:

- Identify the main pathology in the patient,
- Determine the causes of the disease's progression,
- Consider ongoing changes in the patient,
- Diagnose the pathology and substantiate the diagnosis,
- Justify the prognosis,
- Make decisions regarding the appropriate treatment for the patient.

The aspects of clinical thinking are a complex process and should be practiced regularly by future doctors.

To avoid complications in the aspects of clinical thinking development for medical university students, who are future doctors, it is recommended to follow a simplified five-step process:

1. Collect anamnesis from the patient, using both open and closed-ended questions, and conduct a general and local physical examination.
2. Based on the initial diagnosis, the doctor will provide the patient with a referral for diagnostic tests, ensuring they are necessary for the specific case.
3. Compare clinical information with laboratory test results and develop a treatment strategy.
4. Consider using alternative diagnostic methods and assess possible complications.
5. Finally, make a diagnosis and develop a treatment plan, taking the patient’s opinion into account.

Therefore, forming clinical thinking in medical university students is a vital psychological and pedagogical topic. A healthcare worker with well-developed clinical thinking can provide timely and qualified medical assistance to patients.

Principles and Pedagogical Conditions for Developing Clinical Thinking in Modern Medical Professionals

In the rapidly advancing era of technology, pharmacological preparations, and medicine, modern healthcare workers must continuously develop their clinical thinking, regularly enhancing their knowledge through ongoing work on themselves, with the support of educators or trainers. The phases of clinical thinking development for healthcare workers can be broken down as follows:

1. Collecting anamnesis (information about the illness, substantiating symptoms, or anamnesis morbi, anamnesis vitae), including general and local examinations, palpation, percussion, and auscultation.
2. Referring the patient for specialized tests and monitoring their implementation.
3. Summarizing the results of specialized and laboratory tests.
4. Considering the use of alternative diagnostic methods and evaluating potential complications.
5. Making a final diagnosis and developing a treatment plan, taking the patient's opinion into account.

A modern healthcare worker or future practitioner must possess the following qualities:

- **Observation** – the ability to identify nuances that the patient cannot express during the conversation.
- **Objective Thinking** – a common cause of medical errors is the inability to assess the situation and test results objectively. It is essential to evaluate the situation and test results objectively.
- **Strong Memory** – remembering many diseases' symptoms and being able to differentiate them during diagnosis.
- **Concentration** – focusing knowledge on a specific disease.
- **Adaptability** – the ability to change thoughts and opinions about the disease immediately when its course or symptoms change.
- **Broad Thinking** – focusing on dominant symptoms during the initial stages of examination positively impacts treatment outcomes.
- **Experience** – extensive practical experience positively affects the choice of an effective diagnosis and treatment method.
- **Decisiveness** – selecting the right treatment method on time and saving the patient's life.

The formation of clinical thinking begins in medical universities and continues

throughout the practice. The primary goal of educators and trainers is to lay the roots of clinical thinking in future doctors from the very beginning, as clinical thinking is based on comprehensive knowledge.

Medical university students are required to:

- Begin developing clinical thinking from the early stages of their education, starting with fundamental medical sciences.
- Learn and regularly develop clinical thinking from educators and practicing doctors.
- Work on situational problem-solving tasks and discuss solutions with educators.
- Analyze the mistakes of others and anticipate possible errors.

Clinical thinking cannot be formed solely through textbooks or literature; thus, the approach to teaching in medical universities differs from other institutions. From the very first stages of medical education, students should be developing clinical thinking, particularly during their foundational studies.

Conclusion

In conclusion, developing clinical thinking in medical students is an essential process that begins in medical school and continues throughout their professional careers. Clinical thinking requires a combination of knowledge, intuition, and experience, enabling physicians to diagnose and treat patients effectively. By honing skills such as observation, critical thinking, and adaptability, future doctors can provide individualized and high-quality care. Educators and clinical trainers must continually support and enhance students' clinical reasoning abilities to prepare them for the complexities of modern medical practice. Ultimately, the cultivation of clinical thinking equips physicians to make timely and well-informed medical decisions, ensuring better patient outcomes.

In conclusion, developing clinical thinking in medical students is an essential process that begins in medical school and continues throughout their professional careers. Clinical thinking requires a combination of knowledge, intuition, and experience, enabling physicians to diagnose and treat patients effectively. By honing skills such as observation, critical thinking, and adaptability, future doctors can provide individualized and high-quality care. Educators and clinical trainers must continually support and enhance students' clinical reasoning abilities to prepare them for the complexities of modern medical practice. Ultimately, the cultivation of clinical thinking equips physicians to make timely and well-informed medical decisions, ensuring better patient outcomes.

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