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STAGES OF DETERMINING THE DIAGNOSTIC COMPETENCE OF A FUTURE DOCTOR BASED ON THE STUDY OF INFECTIOUS DISEASES

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Abstract: This article explores the pedagogical potential of the Diagnostic Divergence (DD) model as a tool for developing diagnostic competence among medical students. The DD model emphasizes the process of comparing and contrasting multiple differential diagnoses through critical analysis of clinical presentations.

Keywords:Diagnostic competence, infectious diseases, medical education, differential diagnosis, clinical reasoning, simulation, assessment stages, reflective practice.

INTRODUCTION

In contemporary medical education, the process of determining the diagnostic competence of future doctors extends beyond merely assessing their knowledge; it critically involves evaluating their ability to apply that knowledge effectively in clinical practice. The study of infectious diseases offers an ideal context for this comprehensive assessment, as it encompasses a wide spectrum of clinical syndromes, requires diverse laboratory investigations, and presents numerous complex decision-making scenarios. The pedagogical potential of tools like the Diagnostic Divergence (DD) model, which emphasizes the critical analysis of multiple differential diagnoses, highlights the shift toward more dynamic training methods. Establishing clearly defined stages for assessing diagnostic competence allows educators to systematically monitor student progress, identify specific gaps in their clinical reasoning, and tailor teaching strategies to individual needs. Therefore, the implementation of a structured, stepwise diagnostic assessment framework, grounded in infectious disease training, is crucial for preparing students to meet the rigorous demands of modern clinical practice.

METHODS

The methodology for determining and developing diagnostic competence is a systematic process that combines a multi-stage assessment sequence with a pedagogical focus on fostering clinical thinking and utilizing an integrated, cross-disciplinary approach.

The four-stage assessment sequence - The process for determining the diagnostic competence of a future doctor is implemented in the following sequence:

Stage 1: Assessment and Analysis: This initial stage involves assessing the organized situation and conducting a thorough qualimetric analysis of it.

Stage 2: Diagnosis of Skills: The second stage focuses on diagnosing the formation of professional skills and evaluating the student's ability to apply their acquired knowledge in a practical context.

Stage 3: Hypothesis Generation: Based on technological inputs and acquired knowledge, students are expected to make assumptions, formulate hypotheses, and provide justifications for them.

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Stage 4: Confirmation and Verification: The final stage requires confirming the hypothesis and verifying the correctness of the problem-solving process that was undertaken.

Developing clinical thinking - A central tenet of this educational model is the development of clinical thinking, which is seen as a crucial prerequisite for diagnostic competence.

Essence of Clinical Thinking: Genuine clinical thinking is not aimed at finding flaws in the opinions of others but rather at analytically examining any given information. It must contain elements of skepticism to prevent manipulation and reduce errors.

Characteristics: This mindset encompasses several key attributes, including openness to new and contradictory ideas, a desire to correct one's own errors, the ability to objectively differentiate between correct and incorrect opinions, and refraining from making judgments on issues one does not understand.

Process: Developing clinical thinking is not a simple or quick process; it is a complex theoretical and didactic procedure that unfolds through distinct stages and requires specific methodological preparation from the physician.

Integrated (Cross-Disciplinary) approach - The framework utilizes an integrated, cross-disciplinary approach to provide a richer learning experience. The multi-component nature of infectious diseases compels future doctors to expand their thinking and interpret every symptom and laboratory indicator from an interdisciplinary perspective.

RESULTS

The application of this structured approach is aimed at achieving specific didactic objectives and yields significant benefits related to the development of clinical thinking.

Didactic Objectives - The didactic opportunities are designed to cultivate several key abilities in future doctors, including: The ability to set, analyze, and transform educational goals into tangible learning tasks. The possession of field-specific knowledge and the competence to apply it effectively in practice. The skill of differentiating educational tasks based on the individual developmental characteristics of students. Competence in using, selecting, and applying effective forms, methods, tools, and technologies in medical education, such as interactive and modular teaching technologies. The ability to diagnose learning acquisition, analyze student competencies, and eliminate any identified pedagogical deficiencies.

Outcomes of developing clinical thinking - The cultivation of a strong clinical mindset provides numerous advantages for students: It promotes conscious learning over rote memorization, fosters independent and evidence-based reasoning, and thereby increases self-confidence. It helps students discover new aspects of problems and find solutions to emerging challenges. It develops the ability to independently search for answers to new questions posed by the changing realities of life. It encourages openness to communication and fosters an environment of mutual understanding and respect for others' opinions.

The results of the analysis showed that the integrated approach enabled students to acquire not only theoretical knowledge but also complex skills in analyzing real clinical cases, making diagnoses, recognizing and correcting errors, and developing professional reflection.

DISCUSSION

The staged assessment of diagnostic competence provides a robust and systematic approach to developing the critical analytical and decision-making skills of future doctors. A significant challenge in modern medical education is the prevailing lack of a cross-disciplinary approach and insufficient efforts to transform siloed knowledge into integrated competencies, which negatively impacts the quality of physician training. This framework directly addresses

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that gap. The emphasis on clinical thinking is particularly important; this is not merely a skill but a sophisticated mindset characterized by high culture and freedom from demagogy. However, its development can be impeded by personal traits such as vanity or arrogance, which underscores the need for a holistic educational approach that also considers students' personal development.

In any diagnostic process, the primary task for a future doctor is to identify and analyze the causes of difficulties that arise and to determine the necessary measures to prevent them from recurring. The educational model described here prepares students for this responsibility. By progressing through the stages of assessment within the context of infectious disease education, students can gradually master the ability to perform accurate differential diagnoses, interpret laboratory results, and make evidence-based clinical decisions. Ultimately, this systematic method is designed to accelerate their transition from learners into competent medical professionals who are fully prepared for the challenges of clinical practice.

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