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THE IMPACT OF MISUSE OF CHATGPT ON KNOWLEDGE QUALITY AND CLINICAL REASONING SKILLS AMONG MEDICAL STUDENTS

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Abstract

In recent years, artificial intelligence (AI) has become an innovative tool in medical education and practice. However, the inappropriate use of AI or its application without critical thinking may negatively affect students’ knowledge quality and clinical reasoning skills. Studies indicate that improper use of AI reduces active learning and critical thinking among medical students, increases passivity, and raises the risk of decision-making based on inaccurate or unverified information. At the same time, proper integration of AI can enhance educational effectiveness, although clear scientific guidelines and ethical standards are required.

Medical education is inherently complex and demands deep clinical knowledge and well-developed reasoning abilities. Traditional educational models emphasize independent learning, logical thinking, and clinical decision-making. The introduction of AI technologies has significantly transformed the learning process by enabling rapid access to information, simulation-based training, and personalized education. However, concerns have emerged that excessive reliance on AI-generated responses may reduce the depth of knowledge and weaken clinical reasoning skills.

The role of AI in medical education. AI enables students to engage with complex clinical scenarios, study diagnostic models, and strengthen practical skills

through simulation. This approach can improve learning efficiency; however, it may simultaneously diminish analytical thinking if not used appropriately.

Negative consequences of misuse. Recent studies demonstrate that uncritical reliance on AI leads to passive learning, superficial knowledge acquisition, and reduced clinical reasoning capacity. Students who depend entirely on AI-generated answers may lose the ability to make independent decisions and perform logical analysis.

Academic integrity and ethical concerns. Misuse of AI undermines academic integrity. Universities worldwide are reporting increasing cases of AI-assisted plagiarism and academic misconduct, posing a significant threat to educational quality and scientific ethics.

Clinical reasoning and competencies. Clinical reasoning is the ability to independently analyze complex medical conditions and make informed decisions. While AI can provide rapid solutions, it often simplifies multi-step cognitive processes, potentially limiting the development of deep reasoning skills in students.

The question of whether AI misuse in medical education is beneficial or detrimental remains unresolved. AI has the potential to accelerate and enhance the educational process, but only when applied appropriately. Evidence suggests that integrating AI as a supportive tool can reinforce independent thinking; however, excessive reliance on "copy–paste" practices risks undermining knowledge depth. Therefore, it is essential to incorporate AI ethics, critical appraisal skills, and clinical decision-making training into medical curricula.

In conclusion, AI is likely to become an integral component of medical education; however, its misuse may compromise knowledge quality and clinical reasoning skills. Teaching students to use AI critically is essential for maintaining educational standards and supporting effective clinical decision-making. To

preserve academic integrity, educational institutions must develop clear guidelines on the ethical and appropriate use of AI.

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