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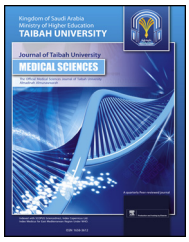

Editorial

Use of artificial intelligence in medical education: A strength or an infirmity

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In recent years, online applications embedding artificial intelligence (AI) have rapidly evolved and started ruling the minds of medical and healthcare students.[1] Common AI applications (such as ChatGPT, OpenAI model) engaged more than one million users in a matter of just a few days.[2] Undoubtedly, AI has a great contribution to aiding medical education by providing support in gaining knowledge, providing direction, and instant feedback to self-directed learners,[3] thus increasing confidence and motivation for lifelong learning. For example, Virtual Assistants (such as Siri, Alexa, and Google Assistant) are used to understand and respond to users' queries, perform tasks, and provide personalized recommendations.[4] Similarly, Natural Language Processing (NLP) is used for applications such as chatbots, language translation, sentiment analysis, voice recognition, and speech-to-text applications.[5] It enables machines to understand and communicate by generating human language. Moreover, AI is also used in adaptive learning platforms, intelligent tutoring systems, language learning apps, and automated grading systems, which personalize education and assist in students' assessments. In addition, AI is also used for a range of clinical applications in healthcare including medical imaging analysis, disease diagnosis, drug discovery, personalized medicine, and patient monitoring systems, which facilitates improving diagnostics, treatment planning, and patients' outcomes.[6]

Although AI has numerous benefits, it also carries a few drawbacks. AI systems are trained on existing data, which can contain biases and discriminatory patterns. If not properly addressed, AI can perpetuate and amplify these biases, leading to unfair or misleading outcomes.[7] Similarly, students may also get misguided by the information provided by AI applications as these systems may not be transparent, making it difficult to understand the evidence and grounds supporting certain conclusions or recommendations. In addition to this, AI may lead to complex ethical questions. Therefore, in healthcare education systems, students cannot solely depend on AI to determine solutions to difficult ethical dilemmas in their real-life practices.[8]

Currently, there are plenty of healthcare students who have started using AI applications in clinical practices to explore solutions for diseases considering it as a rapid and convenient source of information. However, this article emphasizes the need to understand that relying solely on AI for important tasks may lead to a reduced ability to evaluate information, and diminish critical thinking. Consequently, overreliance and blind dependency of medical students on AI may reduce their critical thinking and decision-making skills. This is a crucial time for educationist and regulatory bodies to seriously think of controlling the misuse of AI in the education system and regulate its use, restricting associated risks and potentiating its advantages for students.[9] The reason for thinking so loud is that the AI is not in its mature state and lacks regulatory guidelines.

To conclude, AI has a brilliant future for healthcare education and clinical applications. However, we must consider various limitations and implementation issues associated with AI reported previously[10] including student's mental

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health issues, social issues, and ethical issues. This is the time to promptly think and act about the above-mentioned issues, otherwise, it might be too late.

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Authors' contribution

SS conceived the idea, and SR and ZK wrote the initial draft of the article, SS and MSZ critically revised the final draft. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

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