

GUEST EDITORIAL

Are Medical Educators Primed To Adopt Artificial Intelligence In Healthcare System And Medical Education?

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Currently, the acceptance of artificial intelligence (AI) in the health care system and medical education is growing rapidly. It is crucial to involve healthcare professionals and medical educators in developing, authenticating, and implementing AI-enabled tools in medicine. A lack of AI knowledge and inadequate preparation to embrace this revolution will lead to orthodox patient care. Consequently, medical support will not be optimal to keep pace with rapidly changing healthcare trends worldwide. This is a significant barrier to adopting and implementing AI that will affect the quality of patient care and the future of the healthcare sector. In addition, the limited existing AI education programs are a barrier to the development and implementation of AI-assisted applications at various levels of medical education (Charow et al., 2021).

An artificially intelligent system is an invaluable, powerful, and effective way to enhance the quality of care for patients. Because AI-assisted tools provide an opportunity to customize medicine involves patient information, identification, genetic information, and diagnosis of chronic diseases (Devi & Rizvi, 2022). During the COVID-19 pandemic, a systemic review determined that AI has a substantial role in predicting the spread of disease by tracking the infected population. Therefore, AI can prove as a powerful tool for public health professionals and epidemiologists. Besides, AI assists in radiology explicitly in diagnosing the infected cases with COVID-19 (Iqbal et al., 2021). These tools assist in quick decision-making through AI-operated applications (Awotunde, Jimoh, Matiluko, Gbadamosi, & Ajamu, 2022). Especially, the radiographers readily recognized this technology in their practice because they appreciated the benefit it offers to image acquisition practice and better patient body habitus impact on image quality (Hardy & Harvey, 2020). Given cutting-edge technologies, AI is a game-changer because it has great potential in the screening and management of oncology cases. For instance, AI assists in managing many aspects of lung cancer, especially in the screening and diagnosis of the disease (Zhang & Chen, 2022). However, there is a need to search for the validity of this interpretability and privacy

issues. Although AI is booming rapidly in diagnostic radiology, there is a concern among recent graduates about technology replacing radiologists (Kurowecki, Lee, Monteiro, & Finlay, 2021). The father of neural networks Geoffrey Hinton said "I think that if you work as a radiologist you are like Wile E. Coyote ... You're already over the edge of the cliff, but you haven't yet looked down yet" (Krupinski, 2022, p. 4). In medical education, AI can support personalized educational content and automated structured instant individualized feedback on task performance (Garg, 2020). Through AI-assisted applications, the process of evaluation becomes objective, cost-efficient, and fast as compared to traditional assessment methods. Besides during surgery, virtual reality simulators are used to track body movements and the degree of forces applied to the simulated instruments during surgical procedures. AI tools such as Cloudera can generate enormous datasets and analyze machine learning algorithms. Consequently, these developments enhance the learning process, assessment, and psychomotor skills (Winkler-Schwartz et al., 2019).

Currently, healthcare innovations encourage the use of advanced technologies for altering the experience of being in a body to enhance health and well-being. This approach is called embodied medicine. Artificial Intelligence and embodied medicine are having different epistemological, axiological, and ontological roots. Hence, medical educators must think that how they will swiftly walk hand-in-hand down the lane towards developing this healthy relationship. Their alliance will be fractious, demanding lifelong support provided by insightful medical educationists. Therefore, for the successful implementation of AI, it is well said by Anneke that "Cold" technologies and "warm" hands-on medicine need to walk hand-in-hand" (Van der Niet & Bleakley, 2021, p. 1). Indeed to have a firm grasp of the learning process, the goal of medical educationists in Pakistan should be to assess the awareness of AI, machine learning, and learning analytics in-depth. The knowledge concerning various AI-assisted applications, teaching methods, and pedagogical models must be understood and introduced in medical education. Moreover, there is a dire need to validate these modern tools with traditional clinical trials and debate the medical curriculum reforms in light of ethical considerations (Briganti & Le Moine, 2020).

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This editorial highlights the urgency for healthcare education to incorporate the teaching of AI, machine learning, and digital technologies. However, there is inadequate coverage of this topic in regional medical education. Thus, concrete training to use and translate AI in healthcare settings and to incorporate technology is essential in the clinical workflow (Pucchio, Eisenhauer, & Moraes, 2021). Stakeholders of healthcare, medical education, and biomedical technology must liaison to develop AI and machine learning technologies. It will eventually enhance the human competencies to integral skills for future physicians. Besides, future physicians must be formally introduced to AI applications in the undergraduate, and postgraduate medical curricula. Additionally, there is intense demand to devise structured training courses and faculty development workshops to achieve a better understanding of AI's role in medical education.

This editorial draws the attention of researchers to an important question; are medical educators, policymakers, and stakeholders of medical education ready to adopt AI? No doubt, AI is considered a disruptive technology and a great challenge in presence of traditional interpretations and communication practices during doctor-patient interaction (Triberti. et al., 2022). Therefore, it is expected that AI will produce momentous social and economic shifts globally. Such a situation instigates the medical educators to promote the ethical framework, based on important ethical principles (Hoffmann & Nortjé, 2022). There must be regional guidelines for healthcare providers to drive decision-making that can benefit individual and societal wellbeing while using AI-driven tools. Besides, the role of AI in the domain of medical imaging must be focused with particular attention on the role and responsibilities of the radiologist in Pakistan. Future research should focus on the advancement of regulatory strategies, curriculum redesigning, and patient-clinician interaction.

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