LETTER

Incorporating Technology Adoption in Medical Education: A Qualitative Study of Medical Students' Perspectives [Letter]

Mohammad Eisa Ali¹, Maleeha Pandit², Mohammad Motassam Ali³

¹Department of Medicine & Surgery, University of Pavia, Pavia, Italy; ²Faculty of Medicine, Medical University of Plovdiv, Plovdiv, Bulgaria; ³Department of Pharmacy, University of Huddersfield, Huddersfield, UK

Correspondence: Mohammad Eisa Ali, Email eisa 121@yahoo.com

Dear editor

As advocates for pioneering advancements in medical education, we are compelled to offer further analytical insights into the seminal work, "Incorporating Technology Adoption in Medical Education: A Qualitative Study of Medical Students' Perspectives" by Alrashed et al, 2024. This publication meticulously examines the perceptions and anticipatory frameworks of medical students towards the integration of Virtual Reality (VR), Artificial Intelligence (AI), and telemedicine within their educational and clinical frameworks.

The study deftly elucidates a spectrum of awareness among the cohort concerning VR, AI, and telemedicine. VR is depicted as a pivotal modality for immersive pedagogical experiences, significantly enhancing cognitive retention, comprehension, and student engagement.¹ It offers a controlled environment conducive to heuristic learning through problem-solving and iterative trials. AI is portrayed as a paradigm-shifting innovation in healthcare, poised to refine diagnostic precision and clinical decision-making processes.² Telemedicine is acknowledged for its potential to democratise access to medical services, particularly for geographically isolated or under-resourced populations, resonating with global movements towards technology-enhanced healthcare delivery.

Alrashed et al integrate VR and AI in medical education, enhancing immersive learning in anatomy and surgical simulations, and fostering personalized diagnostic support.³ They evaluate telemedicine's role in expanding educational access to remote regions, highlighting its importance in modern healthcare education. The study used semi-structured interviews analysed with Atlas.ti, capturing diverse student perspectives and revealing varying levels of technological engagement and preparedness. Strict ethical protocols, including informed consent and participant anonymity, ensured data integrity and reinforced the study's credibility.

The study underscores the transformative potential of VR and AI in reshaping medical education. It advocates for the development of structured educational modules that incorporate these technologies, coupled with continuous professional development to adapt to rapid technological evolutions. Additionally, it calls for the standardisation of curricula to ensure comprehensive exposure and proficiency in these technologies among all medical students, suggesting a phased and inclusive strategy for technology integration.

However, certain limitations of this study are discernible and merit attention. The investigative scope, confined to the King Saud Medical University from May to September 2023, might not provide a sufficiently expansive or applicable dataset for wider inferential conclusions.⁴ The modest cohort size of 13 participants constrains the extrapolation of these findings to a broader population.

The employment of semi-structured interviews, although allowing flexibility in responses, introduces potential variability in data collection and necessitates a meticulous approach in qualitative analysis to mitigate subjectivity. The open-ended nature of these interviews generates complex data volumes that are challenging to code and analyse systematically, introducing a time-consuming process.⁵ Furthermore, the partial utilisation of AI within their curriculum

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indicates a gap in the holistic integration of advanced technologies, underscoring the need for a gradual and encompassing adoption strategy.

Concerns regarding the safeguarding of patient data within AI and telemedicine applications are legitimate and demand the implementation of stringent data protection protocols alongside ethical training for students. The economic aspects associated with the deployment of sophisticated technologies such as VR and AI also warrant critical evaluation. Educational institutions must pursue cost-effective solutions and ensure equitable technology access across diverse student demographics, especially in settings constrained by limited resources.

To refine the outcomes and broaden the applicability of future studies, it is recommended to diversify the participant pool and integrate quantitative methodologies to substantiate the qualitative findings. Extending the duration and scope of interviews and incorporating additional qualitative tools would yield deeper insights into the nuanced impacts of technology in medical education. Addressing interviewer bias, the dependency on interviewer skill, and the prevalence of response bias are critical to enhancing the reliability of future research findings.

We sincerely appreciate the authors' insightful contributions to medical education.

Disclosure

The authors report no conflicts of interest in this communication.

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