Letter to the editor: "Revolutionizing Clinical Education: Opportunities and Challenges of AI Integration"

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1 **Title:**

2 Letter to the editor: "Revolutionizing Clinical Education: Opportunities and Challenges of AI

3 Integration"

4   The integration of artificial intelligence (AI) into clinical practice has the potential to

5 significantly impact the way in which physiotherapists within the multidisciplinary team

6 (MDT) are trained and the care they provide to patients. This letter will explore the current

7 and potential implications of AI on clinical education.

8   Within healthcare, Moreno-Fergusson et al. (2021) noted that the use of AI-powered

9 prescriptive and predictive analytics can enhance inpatient care management and decrease

10 the workload of nurses. Zhou et al. (2022) implemented an AI-based standardized electronic

11 handover system with significant potential to enhance paediatric patient safety and improve

12 the handover process. Seibert et al. (2021) also observed that AI has the potential to

13 support healthcare by assisting in the assessment, diagnosis, and prognosis of diseases.

14   An example of one of the primary ways AI is being utilized within physiotherapy is

15 through the development of wearable devices and sensors. These tools track patient

16 physiological data and provide real-time feedback allowing clinicians such as

17 physiotherapists to make more informed decisions and adjust treatment plans as needed

18 (Machado-Jaimes et al., 2022). There is the potential that AI algorithms can analyse data

19 from these devices to predict patient outcomes and personalize treatment plans. This way,

20 AI is able to apply objective measurements in a profession that could often be considered

21 largely subjective. Moving forwards, AI technology has the potential to reduce the time and

22 effort required for certain tasks, freeing up physiotherapists and other MDT members to

23 focus on more complex cases.

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24   Another domain within clinical education that AI may have an impact on is the use of

25 virtual and augmented reality (VR and AR) simulations. These simulations may provide a

26 safe and controlled environment for healthcare students and workers to practice and

27 develop their skills. Additionally, VR and AR simulations can be used to recreate real-life

28 scenarios, allowing practitioners to better understand the physical and environmental

29 challenges that their patients face.

30   While AI has the potential to greatly enhance clinical education and practice, there

31 are also a number of challenges that must be addressed. Key concerns include the need for

32 effective data management and privacy protection. Additionally, there is a need for

33 clinicians to be trained and equipped with the necessary technical skills to effectively use AI

34 tools.

35   Furthermore, there is the risk of deskilling, where healthcare workers may lose

36 important skills and expertise due to the over- reliance on AI algorithms and technology.

37 This could be compounded by poor understanding, overconfidence, and a lack of necessary

38 vigilance of the automated clinical workflow (Panesar et al., 2020). This can be particularly

39 concerning in areas such as clinical decision-making and patient interaction, which require

40 human skills such as empathy, emotional intelligence, and critical thinking. To mitigate the

41 risk of deskilling in healthcare, it is important for healthcare organizations to provide

42 ongoing training and support for their employees to coexist with AI tools.

43   Educational institutions providing preregistration training should provide a formal

44 response to the introduction of novel AI technologies in support of their students learning.

45 There are challenges with regards to accurately assessing the individual's ability to learn,

46 collate, retain and implement new information, where AI could have been used to perform

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47 assessments design to test this process. Those working in academia must be vigilant to

48 ensure that content generated is accurate, as indicated by this piece, as a minority of the

49 references generated were either incomplete or incorrect.

50   While the answer may be to lean onto the use of Objective Structured Clinical

51 Examinations (OSCEs); OSCEs presents its own challenges. OSCES may not accurately reflect

52 the complex and dynamic nature of real-life clinical situations (Gormley, 2011). Additionally,

53 OSCEs are time-consuming and expensive to administer and may also put added pressure on

54 students, potentially leading to stress and anxiety. Similarly, it does not teach students key

55 skills in gathering and generating knowledge.

56   While one may be concerned with student use of AI, there is also a risk that AI-

57 powered education systems could perpetuate biases and existing societal inequalities. For

58 example, AI algorithms used to grade student essays or assess their performance may be

59 trained on biased data, leading to unfair or inaccurate assessments.

60   Another risk of AI in education is the potential for increased inequality. While AI has

61 the potential to provide access to education for people in remote or underserved

62 communities, it also has the potential to widen existing disparities by favouring those who

63 have access to technology and digital literacy skills. This problem may extend towards the

64 inequalities widely seen within healthcare.

65   In conclusion, the integration of AI into interprofessional education has the potential

66 to significantly enhance the training and practice of those working in the clinical field.

67 However, it is important to approach the development and use of AI with caution. Clinicians

68 and academics alike need to consider issues such as inequality, bias, deskilling and academic

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69 integrity. Training in the use of AI tools, and maintenance of key clinical skills, is

70 fundamental for a world where AI is becoming an inevitability.

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72 **Conflict of interest**

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98   Not applicable

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100   Not applicable

Authors' contributions

102   Both authors have contributed to the content, writing and editing of this article. All authors

103   read and approved the final manuscript.

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