

EDITORIAL

ChatGPT in Medicine; a Disruptive Innovation or Just One Step Forward?

Ali Parsa, MD^{1,2}; Mohammad H. Ebrahimzadeh, MD¹

1 Orthopedic Research Center, Department of Orthopedic Surgery, Mashhad university of Medical Sciences, Mashhad, Iran

2 American Hip Institute, Chicago, US

Introduction

ChatGPT a fluent chatbot developed by San Francisco-based Open artificial intelligence (AI); has made a storm that swept the world since its launch in November 2022. It is enabled people to communicate with a machine in almost any topic.¹ ChatGPT passed 100 million users at the beginning of February 2023 which making it as the fastest expanding consumer application.²

There is tremendous potential to incorporate modern artificial intelligence including ChatGPT for medical education. Recently, ChatGPT reached the passing scores for a third-year medical student.³

New era of AI will improve patient education and health literacy by helping people better evaluation of their wellbeing status and reliable understanding of the risks and benefits of interventions. Patients can ask multiple questions and receive reliable responses in a short period of time.

Clinical workflow might utilize ChatGPT and future bots might help for writing medical notes, discharge summaries and scheduling patients. It can assist for making decision and treatment planning for the patients. It is a promise to ease physician's repetitive daily tasks.

For medical educators and faculties, ChatGPT can facilitate writing course syllabi, advice for learning activities, lecture presentation and act as smart assist with student assessment, quiz, and test questions. Faculties can create automatic grading and feedback to students.⁴

You can ask questions about specific ideas, and it can help to generate brainstorming creative ideas. Furthermore, it can write essays, home works for the medical students.

Next area is writing research papers, AIs can generate the draft of manuscripts by accessing to mega data. ChatGPT

listed as author on research papers. Its legitimate application in article preparation has led to being cited as co-author on papers including at least two PubMed indexed articles.^{5,6}

Despite meteoric rise of new AIs and ChatGPT, improper use and other challenges facing these technologies in medicine.⁶ ChatGPT is not connected to the internet to provide current facts and literature. Instead, it programmed to find best words and texts to answer the questions. ChatGPT in its current status is "multilingual but monocultural" because it has learned from English language data (mainly US based) and is unable to reflect all cultures.⁷ Another concern is access to sensitive medical information that might raise patient privacy concerns. Furthermore, it is not guaranteed that the data on which these types of AIs trained was unbiased. Any bias can lead to wrong clinical decision making.⁸

Authorship is an important challenge for AIs. Springer Nature, the world's largest academic publisher, has announced that AIs like ChatGPT are not eligible to be author of academic papers.⁹

There are two main policies regarding authorship positions; the first one following ICMJE recommendations¹⁰ and the second is the Nature criteria¹¹ which ChatGPT does not meet part of the necessary criteria.

In the near future these tools will be widely adopted in the medical field with no doubt. It is critical to modify regulations of scientific writing and provide new control mechanisms to identify any unethical utilization of ChatGPT and upcoming tools in medicine.

Corresponding Author: Mohammad H. Ebrahimzadeh, Orthopedic Research Center, Department of Orthopedic Surgery, Mashhad university of Medical Sciences, Mashhad, Iran

Email: ebrahimzadehmv@mums.ac.ir



THE ONLINE VERSION OF THIS ARTICLE
ABJS.MUMS.AC.IR

References

1. Eysenbach G. The Role of ChatGPT, Generative Language Models and Artificial Intelligence in Medical Education: A Conversation with ChatGPT-and a Call for Papers. *JMIR Medical Education* 2023; 6(9):e46885. doi: 10.2196/46885
2. ChatGPT statistics 2023: trends and the future perspectives. *Gitnux*. Available at: <https://blog.gitnux.com/chat-gpt-statistics/>. Accessed March 3, 2023.
3. Gilson A, Safranek CW, Huang T, et al. How does ChatGPT perform on the United States Medical Licensing Examination? The implications of large language models for medical education and knowledge assessment. *JMIR Med Educ* 2023; 9(1): e45312. doi: 10.2196/45312
4. Trust, T., Whalen, J., Mouza, C. Editorial: ChatGPT: Challenges, opportunities, and implications for teacher education. *Contemporary Issues in Technology and Teacher Education* 2023; 23(1).
5. O'Connor S. Open artificial intelligence platforms in nursing education: Tools for academic progress or abuse?. *Nurse Education in Practice*. 2023; 66:103537. doi: 10.1016/j.nepr.2022.103537
6. Salvagno M, Taccone FS, Gerli AG. Can artificial intelligence help for scientific writing? *Critical Care*. 2023; 27(1):75. doi: 10.1186/s13054-023-04380-2
7. Rettberg, J. (2022, December 6). ChatGPT is multilingual but monocultural, and it's learning your values. <https://jilltxt.net/right-now-chatgpt-is-multilingual-but-monocultural-but-its-learning-your-values/>
8. Myers TG, Ramkumar PN, Ricciardi BF, et al. Artificial intelligence and orthopaedics: an introduction for clinicians. *J Bone Joint Surg Am*. 2020; 102(9): 830-840. doi: 10.2106/JBJS.19.01128.
9. Nature. Tools such as ChatGPT threaten transparent science; here are our ground rules for their use. Available at: <https://doi.org/10.1038/d41586-023-00191-1>. Accessed January 24, 2023.
10. International Committee of Medical Journal Editors. Defining the Role of Authors and Contributors. Available at: <https://www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html>. Accessed June 14, 2022.
11. Nature Portfolio. Authorship. Available at: <https://www.nature.com/nature-portfolio/editorial-policies/authorship#authorship>. Accessed June 14, 2022.