



# Chat GPT in Tailoring Individualized Lifestyle-Modification Programs in Metabolic Syndrome: Potentials and Difficulties?

Ali Mohamed Ali Ismail<sup>1</sup>

Received: 6 June 2023 / Accepted: 13 June 2023  
© The Author(s) under exclusive licence to Biomedical Engineering Society 2023

## Abstract

Worldwide metabolic syndrome (MeTS) rates have been alarmingly increased in the last decades. The use of Chat GPT technology allows for the provision of individualized guidance on MeTS-related health issues like dietary restriction programs, nutritional plans, and exercise regimens/protocols. The use of Chat GPT technology in providing MeTS patients with health advices may be limited by continuous need for high-speed internet sources or advanced/sophisticated computing technologies, providing incorrect/harmful medical/lifestyle advice to patients, and concerns around the security/privacy of MeTS patients' information.

**Keywords** Chat GPT · Lifestyle modification · Metabolic syndrome

## Dear editor,

Worldwide metabolic syndrome (MeTS) rates have been alarmingly increased in the last decades. MeTs (a combination of Type 2 diabetes, central obesity, dyslipidemia, and high blood pressure) [1, 2]. While typical lifestyle-modification strategies/programs like diet restriction and exercise can benefit some MeTS people, they might not work for everyone. New artificial intelligence (AI) technologies are an easy, cheap accessible source of hope for some MeTS sufferers. Particularly, in the field of treating MeTS, MeTS sufferers may benefit from using Chat GPT, a well-liked language model in natural language processing.

A language model called Chat GPT makes use of deep learning to produce human-like responses to text-based inquiries. Numerous applications, such as chatbots, virtual assistants, and language translation, have made use of it. Chat GPT is the perfect tool for applications in personalized

healthcare because of its capacity to comprehend and respond to natural language [3].

Offering MeTS sufferers individualized lifestyle-modification advice is the main potential application of Chat GPT in the treatment of MeTS. The use of technology allows for the provision of individualized guidance on MeTS-related health issues like dietary restriction programs, nutritional plans, exercise regimens/protocols, and psychological support by analyzing a patient's medical history, physical attributes, and lifestyle. Additionally, Chat GPT can monitor a MeTS patient's development over time and modify recommendations as necessary. This individualized strategy may result in more successful weight loss, dyslipidemia control, hyperglycemia improvement, blood pressure control, and a decrease in the dangers to MeTS one's health.

Another potential role of Chat GPT is the predictive modeling for MeTS-related heart diseases/complications including ischemic heart disease. Chat GPT can analyze excessive amounts of MeTs patients' data (smoking history, alcohol consumption history, stress exposure, etc.) to detect patterns/trends that could be utilized to predict the onset of heart diseases and how to prevent them.

The application of Chat GPT in MeTS healthcare is not without difficulties/barriers, though. The ethical ramifications of using AI technology to make healthcare choices or pieces of advice to MeTS patients are one potential problem. MeTS patients might be hesitant to entrust an artificial intelligence-powered healthcare system with their medical

---

Associate Editor Stefan M. Duma oversaw the review of this article.

---

✉ Ali Mohamed Ali Ismail  
ali.mohamed@pt.cu.edu.eg; ali-mohamed@cu.edu.eg

<sup>1</sup> Department of Physical Therapy for Cardiovascular/Respiratory Disorder and Geriatrics, Faculty of Physical Therapy, Cairo University, Giza, Egypt

needs, and there are worries about the possibility of bias in the training data. There are also worries regarding the safety of MeTS patient data and the possibility of breaches.

The continuous need for high-speed internet sources or advanced/sophisticated computing technologies, providing incorrect/harmful medical/lifestyle advice to patients, and concerns around the security/privacy of MeTS patients' information are some of the suggested points that may limit the use of Chat GPT in individualizing a lifestyle-modification program in MeTS.

**Acknowledgments** Not applicable.

**Author Contributions** The author performed the conception, writing, and design of this letter-to-editor manuscript. The final draft of this letter-to-editor manuscript was written, prepared, revised, and approved by the author.

**Funding** This paper did not receive local or international financial support.

**Data Availability** This manuscript contains no data.

## Declarations

**Competing interest** The author declares any shape of conflict of interest.

**Consent to Participate** Not applicable.

**Consent for Publication** Not applicable.

**Ethical Approval** Not applicable.

## References

1. Ismail, A. M. A. Metabolic syndrome components response to the conducted 16-week randomised-controlled training trial on an elliptical trainer. *Eur. J. Physiother.* 25(3):147–153, 2023.
2. Ismail, A. M. A., and D. E. Hamed. Erectile dysfunction and metabolic syndrome components in obese men with psoriasis: response to a 12-week randomized controlled lifestyle modification program (exercise with diet restriction). *Ir. J. Med. Sci.* 2023. <https://doi.org/10.1007/s11845-023-03412-8>.
3. Parray, A. A., Z. M. Inam, D. Ramonfaur, S. S. Haider, S. K. Mistry, and A. K. Pandya. ChatGPT and global public health: applications, challenges, ethical considerations and mitigation strategies. *Glob. Transit.* 5:50–54, 2023.

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.