Ethical concerns about using AI-generated text in scientific research

Zuheir N Khlaif[1, 2]

1Faculty of Educational Sciences and Preparing Teachers. An Najah National University

zkhlaif@najah.edu

INTRODUCTION

Artificial intelligence (AI) has been rapidly integrated into many scientific fields, and its potential to revolutionize scientific research is vast. AI has been extensively used in generating text, where algorithms such as ChatGPT have shown promise in developing coherent and convincing responses to prompts. However, using AI-generated text in scientific research raises ethical concerns like transparency, bias, informed consent, privacy, and accountability. AI-generated text, specifically ChatGPT, can be used for any purpose, such as generating research ideas, finding the research gap in specific topics, summarizing unlimited published articles, etc. However, researchers should be aware that the outcomes of ChatGPT are sometimes misleading, or the information is fabricated. In this extended abstract, I provided the significant findings of conducting qualitative research about the ethical concerns while using ChatGPT in scientific research.

METHODS

The research used a qualitative approach to analyze online talks and speeches published on social media groups such as YouTube and Twitter. I used a thematic approach to analyze the recorded files to determine the main themes of the ethical considerations and concerns reported in the data sources.

RESULTS AND DISCUSSION

Based on the data analysis findings, transparency is a critical ethical concern when using AI-generated text in scientific research, as reported by most experts. Therefore, research practitioners must be aware of this ethical issue when they use ChatGPT in scientific research despite the research stage (generating research ideas or proofreading). Transparent about using AI-generated text and ensure that researchers understand how their input is used to create responses. Moreover,

researchers must declare that they used ChatGPT in their research; that could be in the methodology or acknowledgment sections. It is essential to ensure that the generated text is attributed to the AI model and that any potential limitations or biases are disclosed. Bietti et al. (2020) emphasized that transparency and accountability were essential in mitigating ethical concerns using AI-generated text in legal research.

Bias

Bias is another significant ethical concern in using AI-generated text in scientific research. Bias can significantly affect scientific research, as biased data can lead to biased results and conclusions. AI models like ChatGPT rely on large datasets to train their algorithms, and these datasets may contain biases that the AI algorithm replicates. For example, Liebrenz et al. (2023) found that BERT's popular language model was biased toward certain groups in its generated language. Therefore, researchers using AI-generated text must be aware of the potential biases in the information provided or while reporting the findings of previous studies. For example, when the researcher asked ChatGPT to generate research ide or to find out the research gap in previous studies, it could focus on the positive/negative side.

Informed consent

Researchers, reviewers, editors in scientific journals, and publishers consider informed consent an essential part of collecting data through conducting research, and there is a lack of getting consent while using AI-generated text. Researchers intending to use charGPT should know the basic information to avoid misinformation about their topics and research fields about ChatGPT (Zhuo et al., 2023). The findings of this study in terms of research transparency and consent from the participants as essential research ethics consistent with previous studies (e.h., Dowling et al., 2023; Zhuo et al., 2023). Therefore, to get valid and reliable research findings, researchers need to know about the technology they use for transparency and informed consent.

Privacy concerns

AI models like ChatGPT rely on large datasets to generate text, which may contain personal and sensitive information. As AI-generated text becomes more prevalent in scientific research, it is essential to ensure that privacy protections are in place to safeguard participants' data. Moreover, privacy is a significant ethical concern in using AI-generated text in scientific research. Revealing personal and sensitive information usually leads to privacy violations when the data is unsecured

and protected. In medical and health research, privacy concerns are crucial for participants using AI-generated text (Walsh et al., 2018).

Accountability

Accountability is a critical ethical consideration when using AI-generated text in scientific research. Accountability concerns about how ChatGPT judges the quality of the research, human communication with other authors, and the editorial manager to submit the study and approve the final version, as well as the authorship and ownership. Researchers are required to adhere to the ethics guidelines. Researchers are responsible for using ChatGPT in scientific research in legal decision-making (Bietti et al., 2020).

Research integrity

Information and data retrieved using ChatGPT are misleading. In many cases, the application fabricated references that are not available on many research engines, which put the finding of the research generated by the application unreliable and without trustworthiness to use. Again, researchers are responsible for ensuring the quality and reliability of their research.

CONCLUSIONS

Using any AI-generated text in scientific research has numerous ethical issues, and the researchers have the responsibility for the findings and the information in their research. The publishers should address all of these ethical issues by developing new ethical codes for using AI-generated text. It could not be banned, but we can invest in it to increase the productivity of research and focus more on their data collection tools and the implications of their findings. What we need as practitioners is to stick with research ethics and integrity. Researchers should declare in the methodology and acknowledgment sections that they use ChatGPT in their research with justifications for using it.

Keywords: ChatGPT, AI-generated text, scientific research

REFERENCES

Dowling, M., & Lucey, B. (2023). ChatGPT for (finance) research: The Bananarama conjecture. *Finance Research Letters*, 103662.

Liebrenz, M., Schleifer, R., Buadze, A., Bhugra, D., & Smith, A. (2023). Generating scholarly content with ChatGPT: ethical challenges for medical publishing. *The Lancet Digital Health*, *5*(3), e105-e106.

Lund, B. D., & Wang, T. (2023). Chatting about ChatGPT: how may AI and GPT impact academia and libraries?. *Library Hi Tech News*.

Mhlanga, D. (2023). Open AI in education, the responsible and ethical use of ChatGPT towards lifelong learning. *Education, the Responsible and Ethical Use of ChatGPT Towards Lifelong Learning (February 11, 2023).*

Zhuo, T. Y., Huang, Y., Chen, C., & Xing, Z. (2023). Exploring ai ethics of chatgpt: A diagnostic analysis. *arXiv preprint arXiv:2301.12867.*

Corresponding author: Zuheir N Khlaif; Email: zkhlaif@stu.usm.my