

## Editorial



# Artificial intelligence in medical publishing: An overview of the challenges and opportunities

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In recent years, Artificial Intelligence (AI) has been increasingly integrated into medical research, data analysis, academic and scientific writing assistance, and publishing. Large language models and other generative AI tools, including ChatGPT, DeepSeek, Gemini, Grok, and image generators, are fundamentally changing the field of medical publishing, primarily for the better. These applications are transforming how information is handled, improving speed, consistency, and workflow efficiency.<sup>1,2</sup>

As AI technologies are updated and editors, authors, reviewers, and researchers become familiar with them, some ethical issues are evident and need to be addressed.<sup>3</sup> Despite the International Committee of Medical Journal Editors (ICMJE) and the World Association of Medical Journal Editors (WAME) requiring that AI-assisted technologies used be fully disclosed and overseen by authors, editors, and reviewers, some unresolved issues remain.<sup>3-5</sup> Protection of the credibility, originality, and integrity of medical research, authorship credit, the trustworthiness of AI-generated text, the challenge of assigning accountability for scientific errors, and unintentional plagiarism and misattribution of concepts are among the matters worthy of discussion.<sup>3</sup> To better manage these challenges, Editorial Boards, especially Editors-in-Chief, play a critical role in establishing standards and practices that govern medical publishing across related journals.<sup>6</sup>

Biomedical journal editors should consider adopting the latest ICJME recommendations from May 2023 regarding authorship and the use of AI-assisted technologies in the publication of biomedical manuscripts.<sup>7</sup>

Likewise, WAME has highlighted that misinformation, including Artificial hallucination, unintentional plagiarism, and misattribution of concepts, can have serious consequences, including potential harm to individuals. WAME has recently advised editors and reviewers to inform authors and each other of any use of chatbots in the manuscript evaluation process and in the generation of reviews and correspondence. Therefore, editors of medical journals need access to appropriate

## Author's Biosketch

Dr. Neda Roshanravan earned her PhD. in Nutritional Sciences with a specialization in Medical Biotechnology from Tabriz University of Medical Sciences, Tabriz, Iran, in 2017. Her doctoral studies focused on Cellular and Molecular Nutrition within the field of Medical Biotechnology. Her research primarily focuses on identifying diagnostic and prognostic biomarkers and exploring molecular mechanisms underlying disease pathogenesis, with a major focus on chronic diseases, particularly cardiovascular diseases, diabetes, and cancer. In recognition of her scientific contributions, she has been ranked among the top 2% of the world's most cited scientists in 2025, according to the annual analysis conducted by Stanford University and published by Elsevier.



digital technologies to manage the impact of AI tools on publishing, especially regarding content created or modified by AI-driven technologies.<sup>8</sup>

Even though most major medical society journals have already published editorials or statements addressing the use of AI, recent literature still reveals a fragmented landscape, with responses ranging from outright bans on AI-generated content to proposals for its integration within clearly defined guidelines.<sup>9</sup>

Overall, the Editors-in-Chief of *Biomedicine Advances* adopt a nuanced approach to AI, balancing openness with caution in their perspectives. To ensure proper documentation and ethical compliance, the Generative Artificial Intelligence Tools in Medical Research (GAMER) reporting guideline (<https://ebm.bmj.com/content/early/2025/05/13/bmjebm-2025-113825>) requires that any use of GAI tools at any stage of the research process be openly reported.<sup>10</sup> This will help reviewers and editors swiftly verify whether the use of generative AI tools has been transparently disclosed in the submission.

In conclusion, providing comprehensive learning and training for all grade students, as well as researchers and academic authors, on the relevant applications and



responsible use of AI-assisted technologies is vital. Such training frameworks should not be limited to technical instruction. They should highlight the development of thoughtful reasoning, independent evaluation of AI-generated results, and the ability to investigate the reliability and limitations of these tools.

It's essential to reinforce academic integrity, transparency, and adherence to ethical guidelines when using AI in research, data analysis, and scientific writing. Promoting awareness of these responsibilities will help confirm that AI functions as a supportive tool that enhances research effectiveness while protecting the ethical standards, discipline, and credibility of scientific communication.

#### Competing Interests

None declared.

#### Ethical Approval

Not applicable.

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#### Intelligence Use Disclosure

During the preparation of this work, the author used ChatGPT and Grammarly to correct grammatical mistakes. After using these tools/services, the author reviewed and edited the content as needed and takes full responsibility for the publication's content.

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