



# The impact of artificial intelligence on medical article writing: A boon or a bane?

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## ABSTRACT

As artificial intelligence continues its ascent across numerous sectors, it presents both exciting opportunities and unique challenges for the future of academic publishing. Artificial intelligence (AI) is the way of computer systems to perform tasks that has been done by human brain before, such as learning, problem-solving, and decision-making. In the realm of medical writing, AI is being harnessed through various applications. The increasing amalgamation of AI into medical writing has ignited a fervent debate, with experts and stakeholders divided on whether it represents a valuable tool for progress or a potential threat to the integrity and quality of scientific publications. While proponents celebrate AI's potential to streamline research, enhance efficiency, and broaden access to knowledge, critics voice concerns about ethical implications, the risk of plagiarism, and the potential for deskilling among researchers. Therefore, it is pivotal to acknowledge that AI has the potential to be both a boon and a bane, and its ethical and practical implications must be carefully considered to ensure its responsible and beneficial integration into the spectrum of medical writing.

## 1. Introduction

### 1.1. Boon

#### 1.1.1. Increased efficiency and productivity

Artificial intelligence has grown in importance in medical writing as the field of medicine develops, providing researchers and healthcare professionals with new opportunities to improve their written communication efficiency and productivity.

The assimilation of AI into medical writing has enabled the control of various tasks, from data analysis and literature review to drafting and editing. AI-powered tools can easily go through vast volumes of medical literature, synthesising key insights and identifying relevant information to support the writing process. This not only saves precious time and effort for medical writers, but also assure that they have access to the most up-to-date and comprehensive information available, ultimately leading to the production of more accurate, well-informed, and impactful content<sup>1–3</sup>

Furthermore, AI-driven algorithms can assist in the organisation and structuring of medical documents, ensuring that they adhere to established conventions and guidelines.

The standardisation of format and style in academic writing is a timely benefit for both writers and readers, which not only enhances the clarity and coherence of the written work but also adds credibility and professionalism to the author's ideas.

#### 1.1.2. Enhanced quality and accuracy

Artificial intelligence has emerged as a significant player in the quickly changing field of medical research and communication, with the capacity to greatly raise the standard and accuracy of medical writing.

Particularly with regard to paper writing and the review process, the introduction of AI technologies like chatbots and writing helpers into academic fields has sparked a dialectic discussion about their advantages, potential drawbacks, and ethical ramifications.<sup>4,5</sup> AI's accuracy, speed, and data processing power could enhance human creativity and intellect, leading to a more vibrant environment for scientific research and discovery. Artificial intelligence (AI)-powered technologies can improve scientific publications' effectiveness, efficiency, and quality by enhancing human talents in several writing-related areas.<sup>4</sup>

For instance, AI can assist in generating coherent and well-structured text by analysing the logical flow and organisation of ideas, detecting and correcting grammatical errors through advanced language processing algorithms, and even suggesting relevant literature and data to support the arguments presented.<sup>2,4,6</sup> Nonetheless, there are some ethical and legal concerns with using AI-assisted writing tools in a scholarly setting, such as copyright, and plagiarism.<sup>5</sup> The AI-generated content may be considered a variation of the original text used for training the AI model, which could potentially infringe on the copyright of the original authors.<sup>6</sup>

Furthermore, since biases or mistakes in the generated text could have a major negative impact on patient care and the integrity of medical literature, the correctness and dependability of AI-generated

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<https://doi.org/10.1016/j.jor.2024.10.045>

Received 19 September 2024; Received in revised form 27 October 2024; Accepted 29 October 2024

Available online 30 October 2024

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content in medical writing are extremely important factors to take into account. The academic community needs to create best practices for the appropriate application of AI in medical writing in order to allay these worries.

### 1.1.3. Democratisation of knowledge

The ascent of AI in the area of medical writing has transformed the way knowledge is generated, disseminated, and consumed. The integration of AI-powered tools, such as chatbots and writing assistants, has introduced a new set of ideas that challenges traditional academic practices, presenting both opportunities and ethical considerations. The pervasive influence of AI in medical writing is evident from the increasing adoption of these technologies across the scientific community. Artificial Intelligence's accuracy, speed, and data processing powers can enhance human creativity and intellect, leading to a more vibrant environment for scientific research and exploration.<sup>4</sup> The proficiency of AI models to create coherent, well-structured text has been particularly beneficial, as it can revamp the efficiency and quality of medical writing, ultimately bringing on to better health outcomes for patients. While the democratisation of knowledge through the use of AI in medical writing is a promising development, additionally it brings up a number of moral and legal issues that need to be resolved.

AI-powered medical writing tools can also improve healthcare transparency by giving patients more knowledge about their conditions and the therapies they are receiving. As a result, patients may feel more empowered to make choices regarding their treatment and patient-provider trust may grow.

One of the most important benefits of artificial intelligence in medical writing is its capacity to dramatically increase efficiency and productivity. AI-powered tools can automate time-consuming and repetitive tasks that once occupied countless hours for researchers. For instance, AI algorithms can quickly go through massive research databases, identifying relevant studies and extracting key data points far more rapidly than any human could. This allows researchers to concentrate on higher-level targets such as data interpretation, analysis, and drawing meaningful conclusions. Additionally, AI-assisted writing tools can help generate drafts, suggest improvements to grammar and style, and even ensure consistency in formatting and referencing, further streamlining the writing process and freeing up valuable time for researchers to dedicate to other critical factors of their job. However, the use of AI in medical writing is not without restrictions.

## 1.2. Bane

### 1.2.1. Ethical concerns and plagiarism

A new era of transformative potential as well as intricate ethical quandaries has been brought about by the widespread use of artificial intelligence in the medical field. As AI-powered tools become increasingly prevalent in medical writing, concerns have arisen over the potential for plagiarism, copyright infringement, and the blurring of authorship.<sup>7</sup>

The possibility of plagiarism presented by the application of AI to medical writing is one of the main ethical concerns. Authors run the risk of avoiding the rigorous process of original research and writing by employing AI-powered language models, such as ChatGPT, which are capable of producing extremely logical and convincing text. As the use of AI-generated content without proper attribution would effectively constitute literary theft, undermining the value and credibility of medical research, this could potentially undermine the fundamental principles of academic integrity. Legal issues are also brought up by the use of AI in medical writing since the produced text can be regarded as a derivative work covered by copyright laws, potentially violating the rights of the original content creators whose works were used to train the AI models.

Moreover, the use of AI in medical writing carries the risk of introducing inaccuracies or biases into the generated content. Artificial

intelligence models' article correctness is highly reliant on the caliber and kind of training data they employ. In certain situations, these models may produce inaccurate results, which could result in legal problems like litigation.<sup>5</sup>

### 1.2.2. Over-reliance and deskilling

The field of medical writing has undergone a revolution due to the swift progress of artificial intelligence. Advances in computational power and the widespread use of digital data in the pharmaceutical industry have enabled AI to perform a variety of tasks that were previously performed by human medical writers.<sup>8</sup> On one hand, the incorporation of AI in medical writing holds the promise of enhanced productivity and efficiency, as these self-taught, self-correcting machines can process enormous amount of data and produce content with remarkable speed and accuracy.<sup>9</sup> However, this widespread adoption of AI also prompts questions regarding the potential deskilling and over-reliance on these technologies, potentially compromising the quality and integrity of medical writing.

Recent research indicates that the medical writing process could be greatly improved by AI's accuracy, speed, and data processing abilities. Artificial intelligence (AI) tools, like chatbots like ChatGPT, can help with the brainstorming, writing, and editing of scientific articles, enhancing the field of scientific research and discovery. This collaborative dynamic between human expertise and artificial intelligence can amplify the creativity and cognitive abilities of medical writers, fostering a more robust and comprehensive approach to scientific publications. However, incorporating AI into medical writing is not without its difficulties because these instruments present moral and legal issues that need to be properly resolved.

The possibility of biases or errors in the content produced by AI is one of the main issues with its application to medical writing. The use of AI models that are trained on data that is inconsistent or of low quality can result in the creation of content that is erroneous, inconsistent, or even dangerous. This might have serious repercussions, including the possibility of legal issues like lawsuits and, more crucially, jeopardising patient safety and medical results.<sup>5</sup>

Moreover, the over-reliance on AI in medical writing may contribute to the deskilling of human medical writers, as they become increasingly dependent on these technologies to carry out tasks that were previously only within their area of expertise.

### 1.2.3. Bias and lack of creativity

Concerning potential biases and a lack of creativity in AI-generated medical writing have been raised by the expanding application of AI in the healthcare industry. The difficulties of integrating generative AI tools like ChatGPT into the composition of research publications have been brought to light by recent studies.

The problem of transparency and interpretability is one of the main concern. These AI models pose difficulties in detecting and correcting any inherent biases because they were trained on broad, invisibly vast datasets and human feedback.<sup>10</sup> Furthermore, these models are liable to produce outputs that are susceptible to goal incorrect generalisation, hallucinations, and hostile assaults, which can bring about the generation of potentially harmful content. The lack of transparency and the context-induced algorithmic bias introduced by these AI systems can undermine the accountability of the generated content, posing significant ethical and legal concerns.<sup>11</sup>

The application of artificial intelligence in medical writing raises questions regarding a lack of creativity in addition to the possibility of bias. While AI tools can improve writing speed and efficiency and so complement human abilities, they might not be able to replicate the creative insights, the ability to make new connections, and the nuanced understanding of context that human authors can bring to the table.<sup>10</sup> Furthermore, the homogenisation of research and the deterioration of the diversity of viewpoints and methodologies that are critical for the advancement of medical knowledge can result from the use of

AI-generated content in medical writing.

## 2. Conclusion

The impact of artificial intelligence on medical writing is a topic of growing interest and discussion as the field develops. The precision, speed, and data processing capacity of AI have the potential to improve human intelligence and creativity, which would enrich the field of scientific research and exploration.

Positively, the effectiveness, efficiency, and caliber of scientific publications can all be improved by incorporating AI into medical writing. AI can help with brainstorming, polish and enhance the content, and even speed up the writing and editing process. Beyond the advantages of writing, artificial intelligence (AI) can have a significant impact on healthcare because it can enhance patient safety, produce better health outcomes, and increase system transparency.

However, there are a lot of difficulties with using AI in medical writing. Some of the constraints that need to be addressed are the possibility for biases or inaccuracies in the produced material, potential copyright violations, and medico-legal issues.

AI model output can occasionally be inaccurate, which could raise legal concerns. The quality and type of training data utilised greatly influences how accurate the text produced by these algorithms is.

### Credit author

I, Dr. Raju Karuppal, here by declare that I am the sole author of this editorial article. I also confirm that there are no other individuals who contributed in this article.

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I, Dr. Raju Karuppal, here by declare that there is no financial support from any companies, research grants, or personal relationships with individuals or organizations that are related to the content of the editorial. I also declare that there is no direct or indirect influences from any agents or funding agencies.

### Conflict of interest

In accordance with ethical guidelines and to maintain the integrity of the publication process, I hereby declare the following.

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### Acknowledgment

I, Dr. Raju Karuppal, here by declare that I am the sole author of this editorial article. I also confirm that there are no other individuals who contributed in this article.

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