Artificial intelligence (AI) in medical publications pros and cons

The integration AI into medical publishing is transforming the way scientific knowledge is created, reviewed, and shared. Artificial intelligence technologies are being leveraged to streamline processes such as drafting manuscripts, analyzing complex data, managing references, and ensuring compliance with journal standards. These advancements are not only enhancing the efficiency and accuracy of medical documentation but also opening new avenues for innovation in research dissemination. As AI continues to evolve, it is reshaping the landscape of medical publications by enabling faster workflows, improving accessibility, and supporting researchers in navigating the complexities of academic publishing. However, with these opportunities come challenges that require careful consideration, such as maintaining ethical standards, ensuring accuracy, and preserving the human element in scientific communication. This paper explores the potential of AI in medical publications, highlighting its benefits, challenges, and future implications for the field. Artificial intelligence tools in medical research and publications has many pros and cons, it offers several advantages:

Identify research idea: Accessibility to different databases exposes the gap in the literature and identify future research ideas.

Increased efficiency

Time saving: AI can automate repetitive tasks like data entry, formatting and reference management, allowing the researcher to focus on data analysis and interpretation.

Faster document generation: AI tools can draft articles, abstracts, and summaries in a fraction of the time it would take manually.

Enhanced accuracy: Reduce human errors in formatting, grammar and calculations.

Data validation: AI can cross-check data for consistency, ensuring accuracy in statistical analysis and results.

Improved accessibility

Language support: AI-powered language processing tools can assist non-native English speakers in producing high quality publications

Summarization: AI can create concise summaries or highlights, making research more accessible to a wider audience.

Streamlined peer review and compliance: Automated compliance check: AI tools can ensure manuscripts meet journal and regulatory standards.

Plagiarism detection; AI- powered soft ware can identify duplicate content, maintaining the integrity of the publication process

Advanced insights: AI can analyze large datasets to uncover trends and correlations that might otherwise go unnoticed

Content enhancement: AI can suggest improvements, such as better structure, flow, or citations, enhancing the over all quality of publication.

Cost-effectiveness: Reducing the time and resources needed for the tasks, like editing , proofreading, and formatting can lower the overall cost of producing medical publications

While AI offers many benefits for medical publications, it also comes with several challenges and drawbacks, including:

1. Lack of human judgment
   - Contextual errors: AI may misinterpret complex medical concepts or fail to capture nuanced clinical insights that require human expertise.
   - Limited critical thinking: AI tools cannot fully replicate the critical reasoning and ethical considerations required in medical research.
2. Risk of errors and bias
   - Data-driven inaccuracies: AI systems rely on the quality of input data. Errors or biases in the data can lead to incorrect conclusions or misrepresentations in publications.
   - Algorithmic bias: AI may inadvertently reinforce existing biases in healthcare data, affecting the objectivity of the publication.
3. Ethical and legal concerns
   - Plagiarism risks: Over-reliance on AI tools for writing or summarizing may lead to unintentional plagiarism or lack of originality.
   - Authorship issues: The role of AI in manuscript creation raises questions about authorship attribution and intellectual property.
4. Dependence on technology
   - Over-reliance: Excessive dependence on AI tools may reduce the involvement of researchers in the writing and critical review process, potentially undermining the depth and rigor of publications.
   - Technical limitations: AI tools are only as good as their programming and may struggle with novel or unconventional topics.
5. Cost and accessibility
   - High initial investment: Advanced AI tools often

require significant financial investment, which may not be feasible for smaller organizations or individual researchers.

•Digital divide: Access to cutting-edge AI technologies may be limited in low-resource settings, creating disparities in research capabilities.

6. Ethical implications in peer review

•Automation in review: While AI can assist in peer review, overuse may lead to impersonal assessments, missing the critical expertise that human reviewers provide.

7. Risk of over-simplification

•Overshadowing complexity: AI tools may overly simplify complex medical data or concepts, leading to incomplete or superficial interpretations.

To address these challenges, researchers and publishers must use AI responsibly, ensuring that human oversight critical thinking remain central to the medical publication process.

The Committee on Publication Ethics (COPE) has addressed the challenges posed by AI in scholarly publishing, particularly concerning the potential for AI-generated fake papers. Key points from COPE's discussions and position statements include:

•Artificial intelligence as authors: COPE asserts that AI tools cannot be listed as authors of a paper, as they cannot meet the requirements for authorship or take responsibility for the work.

•Transparency: Authors who use AI tools in manuscript preparation must disclose their use in the Materials and Methods (or similar) section, specifying how and which tools were utilized.

•Detection tools: The development of AI detection tools is underway to identify AI-generated content, including text and images, to maintain the integrity of scholarly publications.

•Ethical use: While AI can assist in various aspects of research and writing, COPE emphasizes that authors are fully responsible for their manuscripts' content, including parts produced by AI tools.

Committee on Publication Ethics's position highlights the importance of human oversight and ethical considerations in the use of AI within academic publishing to mitigate the risks associated with AI-generated fake publications.

Disclosure. *This editorial written with AI support.*

References

1. COPE Position Statement on Authorship and AI Tools. [updated 2023 Feb 13; Accessed 2024 December]. Available from: https://publicationethics.org/guidance/cope-position/authorship-and-ai-tools

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Editor-in-Chief

SMJ annual revision

After the Covid related topics, the journal now recognizes the growing submissions on AI related articles. A number of studies are reporting the current trends of AI and robotics in clinical practice as well as its potential possibilities. We invite submissions of this type as long as it has clear clinical implications and fits the scope of the journal.

Saudi Medical Journal is scheduled to hold a Research Workshop in collaboration with Neurosciences in the first quarter of 2025. The workshop will be led by the Editors and we will be inviting guest speakers to talk about interesting topics and trends in medical publication.

Our latest Journal Impact Factor is 1.7 which is higher than the previous years. We take delight in this achievement despite the challenges in the submission and peer review process. The bulk of submissions we receive are survey design studies. In order to screen further these types of studies we will require the author to check the CROSS checklist[1] for reporting of web and non-web based surveys as part of the submission requirements.

Also, limitation for inclusion of Supplementary Files for each article type is being reviewed. We do not encourage excessive use of tables and images in the manuscript. Images that are created by an artist should have proper disclosure including the applications and tools used to create the images. It is essential that authors read the Instructions to Authors on our website for guidance and reference. Oftentimes that a submission is unsubmitted is because it did not follow the basic journal style, format, and requirements.

Annual statistics. Over the last 3 years, the number of yearly submissions has increased modestly (**Figure 1**). This year we received 734 manuscripts from which we processed 374 articles that have complied with the journal requirements (**Figure 2**). In the year 2022, we published 137 articles and 159 the following year respectively. For the year 2024, we have published 2 Editorials, 5 Systematic Reviews, and 118 Originals, with a total of 1284 pages. A total of 77.4% percent of
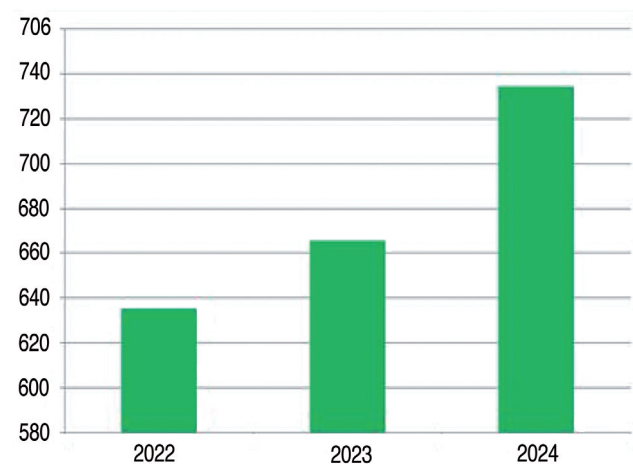

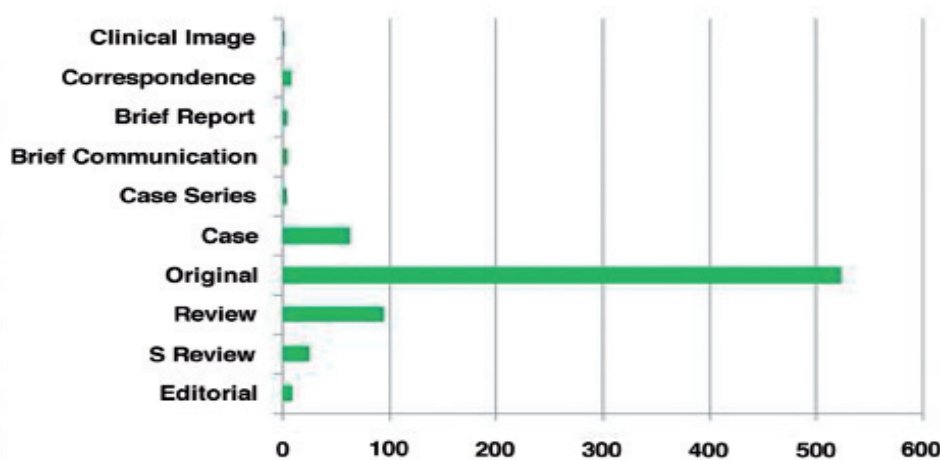**Figure 1 -** Number of manuscripts received for the years, 2022, 2023, and 2024

Figure 2 - Type of manuscripts received for the year 2024.

Table 1 - Origin of "peer-reviewed" articles published in the Saudi Medical Journal for the year 2024.

Origin	n	(%)
Kingdom of Saudi Arabia	106	(77.4)
Gulf countries		
Iraq	1	(0.7)
Qatar	1	(0.7)
Arab countries/Eastern Mediterranean region		
Yemen	1	(0.7)
Jordan	1	(0.7)
Egypt	1	(0.7)
Others		
Morocco	1	(0.7)
Turkey	26	(19.0)
United Kingdom	3	(2.2)
China	18	(13.1)
Indonesia	4	(2.9)
Korea	1	(0.7)
Bosnia & Herzegovina	1	(0.7)
Total	**165**	**(100.0)**

papers we published were from the Kingdom of Saudi Arabia (Table 1). Our total rejection rate was 80% of which 49% were rejected at the initial decision. For the information of the authors, submissions declined from initial screening are not sent to external reviewers and reviewed by the Board hence no other comments and remarks are sent to the authors. The common reasons for rejection from initial submission are the following: studies that are considered too old, more than 5 years, too specialized, not within our scope, add nothing new to existing literature, and previously submitted to preprint servers. It is very crucial that submitted files are peer-review ready. It has become noticeable that despite the papers sent to Editing services, the manuscript was still a continuous script, incoherent and does not follow the logical flow of writing. In connection to this, the journal does not consider AI Editing for the time being. The average processing time frame of original articles in the year 2024 from received date to acceptance was 2.9 months, from acceptance to publication 1.1 months, and from received to publication 3.9 months.

We acknowledge all reviewers for their valuable time and insightful comments. Volunteering for this task is truly commendable.

Saudi Medical Journal has been in continuous publication for more than 4 decades. As we walk towards our Golden Anniversary we look forward with great optimism to the many possibilities in biomedical research and clinical practice that will shape the future of medical journal publishing.

References

1. Equator Network. A Consensus -Based Checklist for Reporting of Survey Studies (CROSS). [Updated; 2022 May 12]. Accessed 2024 December 14]. Available from: https://www.equator-network.org/reporting-guidelines/a-consensus-based-checklist-

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Editorial Message

Our thanks goes to the reviewers who have participated in the excellent review of manuscripts and books for the year 2024.

*Reviewers who reviewed more than 3

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A. Rawat
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A. Seval Ozgu-Erdinc
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