Letter to Editor

# The Illusion of Expertise: The Risks of AI-Assisted Peer Review in Dental Journals

**Shahram Hamedani [1], MScD; Kiarash Fereidouni [2], DMD; Saeed Nemati [3], DMD;**

[1] Oral and Dental Disease Research Center, School of Dentistry, Shiraz University of Medical Sciences, Shiraz, Iran.
[2] Orthodontics Research Center, School of Dentistry, Shiraz University of Medical Sciences, Shiraz, Iran.
[3] Shiraz University of Medical Sciences, Shiraz, Iran.

**Corresponding Author:** Fereidouni K, Orthodontics Research Center, School of Dentistry, Shiraz University of Medical Sciences, Ghasrodasht Street, Mehr Avenue, Shiraz, Iran. Tel: +98-7136263193-4 Email: kiarashfereidouni@gmail.com

**Received:** 13 April 2026;
**Revised:** 19 June 2026;
**Accepted:** 26 October 2026;

**Copyright**
© Journal of Dentistry, this is an open access article distributed under the terms of the Creative Commons Attribution 4.0 International License, (http://creativecommons.org/licenses/by/4.0/) which permits reusers to copy and redistribute the material in any medium or format if the original work is properly cited, and attribution is given to the creator. The license also permits for commercial use.

**Cite this article as:**

## Dear Editor

The peer-review process is conducted to assess the scientific quality and suitability for publication of a manuscript submitted to a dental journal. This process relies on reviewers' expertise and experience in relevant dental fields, making them vital to maintaining scientific standards. Reviewers are expected to thoroughly assess each section of the manuscript and offer constructive feedback that authors can use to enhance their work [1]. Because the peer-review process is time-consuming and reviewers are expected to provide a precise report promptly, there has been debate about the use of artificial intelligence (AI) tools in peer review [2-3]. Some reviewers perceive peer review as closely tied to their level of knowledge and, consequently, to their scientific identity. As a result, they may turn to AI tools to assist, or sometimes replace, them in the review process.

The progression of AI has influenced scientific publishing across many disciplines, including dentistry; unfortunately, sometimes negatively. Given the heavy workload originating from the teaching and research duties of academics, the use of AI tools has become widespread to ease this burden [4]. AI models such as OpenAI's ChatGPT or Google's Gemini are neural networks built on vast statistical relationships in language and trained to generate responses based on patterns in human language [5].

The rapid advancement of AI may lead reviewers to overestimate its capabilities and rely excessively on AI-generated evaluations. As a consequence, some reviewers, mostly leading experts in various dental specialties, use AI to conduct their peer reviews by submitting AI-generated comments as their own without critically evaluating, scrutinizing, or modifying them. This practice creates an illusion of expertise, where the appearance of critical evaluation masks the absence of genuine intellectual engagement. Subsequently, some questions arise:

*Can AI tools actually replace reviewers? Is it authorized in all journals? Is it ethical?*

AI tools excel primarily at recognizing patterns rather than identifying absolute truths, but they may struggle to detect subtle biases or nuanced aspects of study quality. This highlights the importance of human judgment and critical review to verify the accuracy and trustworthiness of findings. They can detect trends and connections in data, but may not always assess the validity or credibility of individual studies or claims in dental research. This underscores the need for human oversight in peer review. Additionally, AI tools may not have access to all relevant sources, resulting in incomplete literature coverage [6]. They may also struggle to assess study quality and interpret context-specific methodological issues [7]. AI tools may struggle to grasp the

context of research questions, leading to irrelevant search results and difficulty retrieving all relevant studies [8]. Furthermore, AI tools may inadvertently reinforce biases in their training data, producing biased results or omitting significant studies [9-10]. Cross-linguistic ambiguity and limitations can also lead to misinterpretations, underscoring the need for human judgment in peer review.

While AI tools can offer basic feedback, they cannot fully substitute a human (professor) expert in the relevant dental field who might comment, "This analysis is not appropriate for this topic or research question." AI tools assist with peer review, but their limited capacity to interpret complex scientific context means human input remains crucial for comprehensive content assessment. While AI tools identify and consolidate existing material, humans contribute innovation, evaluation, and a mix of creativity, curiosity, and expertise from various fields to synthesize, interpret, and critique [11].

Additionally, the use of AI tools in academic writing has raised concerns about hallucinations [12]. Multiple reports of incorrect citations appear in research articles. It has been reported that 1 in 277 articles published in PubMed has generated references [13]. There are also concerns about the creation of fake scientific images that can be indistinguishable to the human eye. The development of generative images or citations may be a burden for reviewers in two possible ways, including 1. Adding another assignment for reviewers and editors to assess submitted manuscripts for such inconsistencies, or 2. Providing review comments based on hallucinations that do not apply to the submission. AI tools excel primarily at recognizing patterns rather than identifying absolute truths [4-5]. Furthermore, for an article to be evaluated by an AI tool, it must initially be uploaded to an AI tool application. This process raises significant ethical concerns, as it jeopardizes the confidentiality of manuscripts submitted to academic journals. The confidentiality of content uploaded to an AI tool cannot be guaranteed [6]. As a result, the National Institutes of Health and the Australian Research Council *prohibit* the use of AI tools, such as ChatGPT, in the peer-review process. Additionally, many leading academic journals do not permit this utilization in peer reviews.

A shift toward a hybrid peer review model (augmenting model) that combines human reviewers with AI tools may reduce several long-standing problems in scientific publishing, particularly in dental journals, such as reviewer fatigue and slow editorial timelines. AI tools can assist with technical screening, while scientific evaluation requires human expertise and judgment. One example came from the 2025 Peer Review Congress, where a presentation described the "Fast Track" review process used by NEJM AI [14]. Decisions were reportedly issued within seven days, using editor assessment along with two AI-generated reviews. Fast responses sound attractive. Still, relying entirely on automated systems would be risky. At least two experienced human specialists, serving as editors or external reviewers, should remain involved to preserve depth, critique, and accountability throughout the review process.

A function-based framework for AI use in peer review is proposed in Table 1, which can be translated into journal policy. Reviewer guidelines should clearly differentiate among language editing, defined verification tasks, and substantive scientific evaluation rather than treating all AI involvement as a single category, since not all uses of AI in peer review are ethically equivalent.

In conclusion, AI tools will likely remain part of academic publishing, and publishers and researchers will

**Table 1:** AI employments in dental peer reviews: classifications and safeguards

| Type of use | Examples | Proposed status | Required safeguard |
|---|---|---|---|
| AI-assisted language editing | Grammar, clarity, or organization of reviewer-written comments | Generally permissible | Protect confidentiality and verify that the edited text preserves the reviewer's intended meaning. |
| AI-assisted technical check | Reporting checks for dental clinical trials and systematic reviews, internal consistency, references, or calculations | Conditionally permissible | Independently verify every result before including it in the review. |
| AI-generated scientific judgment | Substantive criticism, novelty or validity assessment, publication recommendation, or a complete review | Generally unacceptable as a substitute for expert review | The reviewer must retain and be able to defend the underlying scientific judgment. |

keep testing where these systems fit. Careful oversight is still required at each stage. Though a model can process text quickly, it cannot replace human judgment, field experience, or scientific intuition.

**Acknowledgment**
None

**Authors' Contribution**
Shahram Hamedani: manuscript conception, critical revision, and supervision. Kiarash Fereidouni: conceptualization, literature review, original drafting, and manuscript coordination. Saeed Nemati: critical revision of the manuscript and its intellectual content. All authors reviewed and approved the final manuscript.

**Declaration of AI**
Declaration of AI: The authors did not use AI at any stage of conducting the research, drafting, or reviewing the manuscript.

**Conflict of Interest**
The authors declare that they have no conflict of interest.

**References**

[1] Willis LD. The Peer Review Process. Respir Care. 2024; 69: 492-499.

[2] Kemal Ö. Artificial Intelligence in Peer Review: Ethical Risks and Practical Limits. Turk Arch Otorhinolaryngol. 2025; 63: 108-109.

[3] Balaji SM. Risks and Benefits of Artificial Intelligence for Peer-review. Indian J Dent Res. 2023; 34: 1.

[4] Sohail A, Zhang L. Using large language models to facilitate academic work in the psychological sciences. Curr Psychol. 2025; 44: 7910-7918.

[5] Nayak P, Gogtay NJ. Large language models and the future of academic writing. J Postgrad Med. 2024; 70: 67-68.

[6] Doskaliuk B, Zimba O, Yessirkepov M, Klishch I, Yatsyshyn R. Artificial Intelligence in Peer Review: Enhancing Efficiency While Preserving Integrity. J Korean Med Sci. 2025; 40: e92.

[7] Bareh CK. A qualitative assessment of the accuracy of AI-LLM in academic research. AI and Ethics. 2025; 5: 4305-4324.

[8] Felizardo KR, Deizepe A, Coutinho D, Gomes G, Meireles M, Gerosa M, et al. On the difficulties of conducting and replicating systematic literature reviews studies using LLMs in software engineering. 2025 IEEE/ACM International Workshop on Methodological Issues with Empirical Studies in Software Engineering (WSESE). Available at: https://experts.azregents.edu/en/publications/on-the-difficulties-of-conducting-and-replicating-systematic-lite-2/

[9] Tiwari S. Biases and Fairness in LLMs. Generative AI: Techniques, Models and Applications. Springer; 2025. p. 229-242.

[10] Wei X, Kumar N, Zhang H. Addressing bias in generative AI: Challenges and research opportunities in information management. Information Management. 2025; 62: 104103.

[11] Kranzle T, Sharratt K. Evaluating Creative Output with Generative Artificial Intelligence: Comparing GPT Models and Human Experts in Idea Evaluation. Creat Innov Manag. 2025; 34: 991–1012.

[12] Anjum UB, Hirasawa K, Fatima U. A comparative study of ChatGPT in scientific writing assistance: accuracy, style, and hallucination patterns across GPT-4o, GPT-5.0, and GPT-5.1. AI and Ethics. 2026; 6: 204.

[13] Topaz M, Roguin N, Gupta P, Zhang Z, Peltonen LM. Fabricated citations: an audit across 2·5 million biomedical papers. Lancet. 2026; 407(10541): 1779-1781.

[14] Kohane I. A Singular Disruption of Scientific Publishing-AI Proliferation and Blurred Responsibilities of Authors, Reviewers, and Editors. 10th International Congress on Peer Review and Scientific Publication; September 3–5, 2025; Chicago, IL, USA2025. Available at: https://peerreviewcongress.org/abstract/a-singular-disruption-of-scientific-publishing-ai-proliferation-and-blurred-responsibilities-of-authors-reviewers-and-editors