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Letter to the editor

Emphasizing the impact of artificial intelligence in dentistry: A call for integration and exploration



Dear Editor,

I am writing to you as a passionate advocate for advancements in dental technology and the potential of artificial intelligence (AI) in transforming the field of dentistry. I have recently come across a remarkable body of literature, and I would like to emphasize the significant impact of AI in dentistry and the need for its integration and further exploration.

The landscape of dentistry is evolving rapidly, driven by technological advancements and innovative approaches. AI, in particular, has emerged as a promising tool with the potential to revolutionize various aspects of dental practice, research, and education. The references enclosed with this letter represent a comprehensive compilation of recent reviews and studies focusing on AI applications in dentistry.^{1–12}

From the detection of periapical radiolucent lesions to computer-assisted surgical planning, AI has demonstrated remarkable diagnostic accuracy, efficiency, and precision. These studies consistently showcase the ability of AI algorithms to augment human expertise, enhance decision-making processes, and improve patient outcomes. The applications of AI in dentistry encompass a wide range of areas, including but not limited to oral/maxillofacial radiology/surgery/pathology, prosthodontics, orthodontics, endodontics, and periodontology.^{2–8}

However, while the potential of AI in dentistry is immense, its integration into routine practice and education is still in its early stages. There is a pressing need for increased awareness, education, and collaboration among dental professionals, researchers, and educators to ensure the responsible adoption and seamless integration of AI technologies. Additionally, the ethical and legal implications associated with AI implementation in dentistry warrant further exploration and discussion.^{10,11}

I would like to emphasize the importance of fostering interdisciplinary collaborations between dental professionals, computer scientists, and AI experts to accelerate the development and application of AI in dentistry. Collaborative research initiatives and educational programs can bridge the gap between the dental and technological domains, fostering a synergistic approach that maximizes the potential of AI to assist both dental practitioners and patients.^{9,12}

Furthermore, I urge the dental community to encourage and support research endeavors focusing on AI in dentistry. Funding agencies and academic institutions should prioritize the allocation of resources to foster research projects aimed at exploring the full potential of AI in various dental subspecialties. By doing so, we can propel the field forward and unlock the transformative power of AI in dentistry.^{1,9,12}

In conclusion, the comprehensive literature review presented in the enclosed list of references underscores the significant impact of AI in dentistry.^{1–12} I believe it is crucial to raise awareness and promote the integration of AI technologies in routine dental practice, research, and education. By embracing this transformative technology, we can enhance patient care, optimize treatment outcomes, and advance the field of dentistry into a new era.

I sincerely hope that such attention will stimulate further discussions, collaborations, and initiatives in the field of AI in dentistry.

Declaration of AI-assisted technologies

During the preparation of this paper, the author utilized the assistance of chat.openai to improve language/readability. The AI model provided suggestions/guidance, which were then reviewed/edited by the author. The author takes full responsibility for the final content of the publication and its accuracy.

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Declaration of competing interest

The author has no conflicts of interest related to the article.

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