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Letter to the editor

The implementation of artificial intelligence in dentistry could enhance environmental sustainability



Dear Editor,

Oral health acts a pivot on general health as the first step to achieve the Sustainable Development Goal (SDG) 3.¹ The conduction of new technology in dentistry may facilitate human health and life quality. Recently, we read an interesting review article in your journal about the development, application, and performance of artificial intelligence (AI) in dentistry.² We concurred that the implementation of AI in dentistry can improve the quality and accuracy in clinical diagnosis, treatment plan, and prognosis prediction. However, little is known about the role of AI in achieving the SDGs in dentistry. This critical sustainable issue is worthy to further investigation.

The definition of sustainability in dentistry by World Dental Federation is 'Dentistry as a profession should integrate SDGs into daily practice and support a shift to a green economy in the pursuit of healthy lives and wellbeing for all through all stages of life'.³ Therefore, the conduction of AI in dentistry may not only facilitate the dental education of equitable quality, but also enhance environmental sustainability. For example, the implementation of haptic virtual reality dental trainer could reduce the consumption of consumables such as plastic teeth.⁴ The use of electronic patient record format may contribute to fewer disposables or paperless. Digital imaging system could both eliminate the harmful chemical contamination and minimize the radiation injury. Teledentistry not only reduce the inequality of people who live in remote regions and current COVID-19 crisis situation,⁵ but also could lower the carbon footprint as well as slow down the global warming.

Taken together, AI has significantly changed the clinical approach to dentistry. The implementation of AI in dentistry could also enhance environmental sustainability by saving water and energy as well as reducing carbon emission and waste. Besides to traditional clinical competency-based dental education, it is suggested to use

further thinking tools for embedding AI into current dental curriculum for achieving environmental sustainability and good health in 2030.

Declaration of competing interest

The authors have no conflicts of interest relevant to this article.

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