



Editorial:

Artificial Intelligence (AI) in Pediatric Dentistry

Raghavendra M. Shetty

Editor

Journal of Updates in Pediatric Dentistry

¹ Department of Clinical Sciences, College of Dentistry, Ajman University, Ajman, UAE.

² Center of Medical and Bio-allied Health Sciences Research, Ajman University.

³ Dept. of Pediatric and Preventive Dentistry, Sharad Pawar Dental College and Hospital, Datta Meghe Institute of Higher Education and Research (Declared as Deemed-to-be University) Wardha, Maharashtra, India.



How to cite this as: Raghavendra M. Shetty. Artificial Intelligence (AI) in Pediatric Dentistry. J Updates Pediatric Dent. 2023; 2(1): 1-2

DOI: <http://doi.org/10.54276/JUPD.2023.2101>

Dear colleagues,

Artificial intelligence popularly termed as AI is defined as “a field of science and engineering concerned with the computational understanding of what is commonly called intelligent behaviour, and with the creation of artefacts that exhibit such behaviour.”¹

AI has marked its presence in certain fields of pediatric dentistry including age estimation in children, identification of early childhood caries (ECC) patterns, landmark identification in lateral cephalogram, supernumerary and mesiodens identification in orthopantomogram (OPG), dental plaque detection through photographs and oral health education.^{2,3}

AI has the potential to modernize the field of pediatric dentistry, where the AI algorithms can analyze patient data, including medical history, dental history, clinical findings, and dental radiograph interpretation to assist in diagnosing dental conditions in children and developing treatment plans suitable for the pediatric age group.

AI-powered virtual reality tools can be used to create interactive experiences for children during dental visits. This can help alleviate anxiety and fear, making dental treatments more comfortable for pediatric patients. AI can analyze data and provide personalized oral hygiene instructions to children and their parents. These platforms can use gamification techniques to teach oral hygiene practices and oral health concepts in a fun and interactive way that includes customized recommendations for brushing techniques, flossing, dietary advice and better oral health promotion habits. AI can assist in developing behaviour management strategies for pediatric patients. By analyzing patient data and behavioural patterns, AI algorithms can provide insights and recommendations to help pediatric dentists create a positive and calming environment for children during dental visits.

It is important to note that while AI has the potential to enhance diagnosis, treatment planning and therapeutic needs in pediatric dentistry, it cannot replace the human interaction and expertise of a trained pediatric dentist. AI should be seen as an

adjunct tool to assist and support pediatric professionals in providing the best possible care to young patients. However, there are a lot of opportunities to bridge the research gap through an evidence-based approach using AI in pediatric dentistry.

References

1. Shapiro SC. Artificial intelligence (AI). In: Encyclopedia of Computer Science. 2nd ed., Vol. 1. New York: Wiley; 2003. p. 89-93.
2. Mahajan K, Kunte SS, Patil KV, Shah PP, Shah RV, Jajoo SS. Artificial intelligence in pediatric dentistry – A systematic review. *J Dent Res Rev* 2023;10:7-12.
3. Vishwanathaiah S, Fageeh HN, Khanagar SB, Maganur PC. Artificial Intelligence Its Uses and Application in Pediatric Dentistry: A Review. *Biomedicines*. 2023; 11(3):788.