



KEYNOTES AND RESOURCES

Episode 102 – Interview with Dr. Moharrami: Using AI to detect dental caries on oral photographs February 9, 2024

Dr. Mohammad (Faraz) Moharrami, DDS, MSc

Dr. Moharrami is a dentist and researcher deeply invested in the intersection of dental science and data analytics. His educational journey started with a Doctor of Dental Surgery degree from Tehran University of Medical Sciences, focusing on the quality of life in clients with temporomandibular disorders.

He then pursued a Master of Science in Medical Sciences at the University of Alberta, where his research explored the effects of nitrous oxide in pediatric dentistry. Currently, he is completing a combined PhD and Dental Public Health Specialty at the University of Toronto. His PhD research is pioneering in its use of machine learning to predict radiotherapy side effects in individuals with head and neck cancer, and is supervised by Dr. Carlos Quinonez and Dr. Michael Glogauer.

Dr. Moharrami has contributed to over 26 peer-reviewed publications and had the honour of receiving the Canadian Institutes of Health Research (CIHR) Doctoral Award. He also completed an internship at Statistics Canada, which further honed his analytic skills. His role as a Dental Public Health Resident has provided him insights into public health principles, economic evaluation, and policymaking. With his blend of clinical knowledge, research skills, and AI analytics, he is uniquely positioned to advance healthcare innovation through technology and data-driven approaches.

Research

Detecting dental caries on oral photographs using artificial intelligence: A systematic review

Overview

The systematic review by [Moharrami et al. \(2023\)](#) underlines the potential and challenges of artificial intelligence (AI)¹ in the automated detection of dental caries.² Automatic detection of dental caries using AI may lead to improved objective verification of clinicians' diagnoses and facilitate client-clinician communication and teledentistry. [1]

¹ Refer to Episode 85 for discussion on artificial intelligence in oral healthcare.

² Refer to Episodes 86 and 87 for discussion on dental caries.

Research team

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Reference

- [1] M. Moharrami, J. Farmer, S. Singhal and et al., "Detecting dental caries on oral photographs using artificial intelligence: A systematic review," *Oral Diseases*, pp. 1-19, 1 July 2023.

Additional Resource

Detecting dental caries on oral photographs using artificial intelligence: A systematic review, Moharrami, M; Farmer, J; Singhal, S; Watson, E; Glogauer, M; et al. *Oral Diseases*, July 1, 2023, p 1-19 <https://onlinelibrary.wiley.com/doi/full/10.1111/odi.14659>

Current progress and challenges of using artificial intelligence in clinical dentistry—A narrative review, Surlari, Z; Budală, D; Lupu, C; et al. *Journal of Clinical Medicine*, Volume 13, Issue 15, July 27, 2023, p 1-16 <https://www.mdpi.com/2075-4418/13/15/2512>