

Episode #43 – Interview with Dr. Madathil: Incidence of COVID-19 in Dentistry Aug 27, 2021

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Sreenath A Madathil is an oral epidemiologist whose work lies at the intersection of epidemiology, data science, and machine learning disciplines. His research interest is in the implementation of advanced statistical models and machine learning algorithms to support the clinical decision-making process in oral health care. [1]

Education:
PhD in Craniofacial Health Science, 2018, McGill University
MSc Dental Science, 2013, McGill University
Bachelor of Dental Surgery, 2009, University of Calicut [2]

Purpose of the study[1]
The purpose of the study is to estimate the incidence rate of COVID-19 among dentists and its risk associated with the use of aerosol-generating procedures (AGP) and N95 masks, through the phased reopening of dental care services across different jurisdictions in Canada. [3]

Researchers
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Description of the research
The study followed a group of Canadian dentists for a period of 12 months (July 2020 – July 2021). The participants were first invited to complete an online baseline survey. Three domains of information were collected at this stage:
1) Socio-demographics and comorbidities;
2) Details of dental care provided to patients in the previous two weeks (Clinical Activity Form); and
3) Symptoms related to COVID-19 and infection status (Outcome Form).

[1] Refer to Episode #17 for preliminary discussion on this research.

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After the initial survey, SARS-CoV-2 negative participants were invited to the longitudinal phase of the study. During this phase, participants were contacted every 4 weeks for 12 months to complete the online Clinical Activity Form and Outcome Form.

To accurately detect SARS-CoV-2 infection, a subset of the participants was asked to self-collect a small quantity of saliva (< 2 ml) using a swab collection kit provided by the researchers. The samples were shipped to the Salivary Proteomics Research Laboratory (SPRL) at the College of Dentistry, University of Saskatchewan. At SPRL, the samples were analyzed for the presence of the virus using RT-PCR. The process of collecting saliva and testing was repeated every 4 weeks for the 12-month period. At each testing round, the test results were communicated to the participants. [3]

Overview of the prospective cohort study over a six-month period

Oral healthcare professionals are at high risk of SARS-CoV-2 exposure due to close contact with potentially infected clients and utilizing aerosol-generating procedures. [4] [5]

In March 2020, dental regulatory authorities across Canada recommended dentists close their offices for routine care and only provide emergency care, due to high risk of SARS-CoV-2 exposure. In early May 2020, dentists were allowed to re-open their offices for routine dental care while adhering to clinical guidelines for SARS-CoV-2.

The prospective cohort study by Madathil et al. (2021) examined the incidence of COVID-19 among Canadian dentists as well as their emotional wellbeing during the pandemic from July 2020 to February 2021. More than 600 licensed dentists from 9 provinces (AB, BC, MB, NL, NS, ON, PE, QC, SK) participated.

The results of the study suggest prevalence of COVID-19 among Canadian dentists during the first wave was low (< 1%).[2] The infection rates were also lower compared to the general population during the study period, despite oral healthcare professionals being a high-risk group. Furthermore, the infection rates of the study's population were comparable to the prevalence observed for dentists in the United Stated (0.90%).[3] [6]

The study also investigated COVID-19-related anxiety among Canadian dentists during the pandemic. Most of the participants felt confident being protected using personal protection equipment (PPE), avoided potentially high-risk exposure settings (e.g., use of public transportation), and performed self-evaluations of COVID-19 symptoms nearly every day.

The overall results indicate the low incidence of COVID-19 among Canadian dentists likely resulted from a combination of factors including, but not limited to, closure of offices, higher awareness of potential COVID-19 risks, and rigorous infection prevention and control protocols used during dental procedures. [7]

[2] SARS-CoV-2 infection was not detected in the saliva samples but was self-reported by participants.
[3] Refer to Episode #20 for more information on Covid-19 prevalence among US dentists.

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COVID-19 among Canadian dental hygienists

Madathil and colleagues are conducting a similar study to estimate the risk of COVID-19 among Canadian dental hygienists. Dental hygienists in Ontario were invited to participate via the College of Dental Hygienists of Ontario in December 2020. [8]

The study consists of completing an online questionnaire every 4 weeks for a period of 12 months (December 2020 to December 2021). The study results will be provided to participants as well as dental hygiene regulatory authorities and public health authorities to aid in their decision-making and guidance to dental hygienists and the public. [8]

Dental hygienists participating in this study are encouraged to continue to participate to increase the reliability and validity of the results. Their participation is greatly appreciated.

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Additional Resources

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