

# COVID-19—Are telehealth and tele-education the answers to keep the ball rolling in Dentistry?

Dear editor,

Larry David, the co-creator and producer of *Seinfeld*, when asked by a reporter from the *New York Times* about what he fears the most while quarantining during the COVID-19 Epidemic, responded “Anarchy and a potential dental emergency — and not necessarily in that order” (Dowd, 2020). The pandemic introduced a new layer of challenges on how to provide care and alleviate pain. Restrictions have been implemented by the majority of governments, as SARS-CoV-2 has been detected in saliva samples and infection typically spread through respiratory droplets (Centers for Disease Control, 2020).

The management of dental patients during the COVID-19 pandemic poses additional challenges also because of widespread, global shortages in PPE and of lockdowns, where such recommendations fall short. There is not such a thing as a “one size fits all recommendation.” Several recommendations have been laid out for the provision of oral health care, including telescreening and triaging, patient evaluation and cohorting, and pharmacologic management (Ather, Patel, Ruparel, Diogenes, & Hargreaves, 2020). Substitution of the use of handpieces by hand instrumentation when possible and the use of minimally invasive dentistry has also been advocated. In fact, telescreening is an important first measure to determine whether patients may or may not be suspected of COVID-19 infection. However, it constitutes only one of many of the uses of teledentistry, which may be a valuable tool in the management of dental patients during the pandemic.

Teledentistry refers to the use of information and communication technologies to improve dental care offered to distant or isolated people, with the support of specialists (Carrard et al., 2018; Daniel & Kumar, 2014). More recently, teledentistry use has increased progressively, particularly in large countries such as Brazil. In the case of the Telehealth program of the Federal University of Rio Grande do Sul, the goal is to strengthen the coordinating role of primary care and improving health care with the use of innovative telehealth applications with actions that include teleconsultation, telediagnosis, and tele-education (Harzheim et al., 2016). Specifically, we have EstomatoNet, a telediagnosis service created to support primary care dentists and physicians in the diagnosis and decision making for oral lesions. A survey on the reports of this service reveals that in 25% of the requests, the recommendation was

medication prescription or follow-up (Carrard et al., 2018). This suggests not only that telescreening and teletriage might be extremely useful, but also that telehealth strategies might be effective in the pharmacological management of several oral conditions, contributing to reduce SARS-CoV-2 spread.

Lastly, we will approach tele-education in dentistry, since dental education has come to a halt worldwide. It is clear that the COVID-19 pandemic has had an impact on dental education (Quinn et al., 2020), disrupting the traditional education of future dentists for months to come. Tele-education quickly became an option (Mukhopadhyay et al., 2020) that has been welcomed by health science students and faculties. Incorporating online elements into education has been reported to bring many benefits, and has been recognized as a successful educational strategy, including dental education (Linjawi, Walmsley, & Hill, 2012). It may represent an important tool during the pandemic, in terms of increased accessibility, at anytime and anywhere (Quinn et al., 2020).

To the benefit of dental educators, the existing evidence supports that dental education with the support of telematics is effective in knowledge acquisition (Lima et al., 2019). However, it should be pointed out that distance learning is not transferring the traditional lecture to a web-based platform. Distance learning must not be a poor version of traditional, in-class dental education. In spite of its success, our experience with tele-education also had its challenges, particularly low attendance (Roxo-Gonçalves et al., 2017), which were partially overcome by further adapting and changing the courses to incorporate the needs of students (Bavaresco et al., 2019).

## CONCLUSION

The novel pandemic undoubtedly created stress throughout the healthcare system, and for dentistry to keep the ball rolling, dental care delivery needs to be redesigned. Evidence supports the use of teleconsultation consulting and tele-education as effective alternatives in this hard period to avoid SARS-CoV-2 dissemination and more collateral damage.

## CONFLICT OF INTEREST

None to declare.

## AUTHOR CONTRIBUTION


**Manoela Domingues Martins:** Conceptualization; Data curation; Formal analysis; Investigation; Writing-original draft; Writing-review & editing. **Vinicius Coelho Carrard:** Conceptualization; Data curation; Formal analysis; Visualization; Writing-original draft; Writing-review & editing. **Camila Mello dos Santos:** Data curation; Formal analysis; Visualization; Writing-original draft; Writing-review & editing. **Fernando Neves Hugo:** Conceptualization; Data curation; Formal analysis; Visualization; Writing-original draft; Writing-review & editing.

## KEYWORDS

e-education, e-health, SARS-CoV-2, teleconsulting, teledentistry

Manoela Domingues Martins<sup>1</sup> 

Vinicius Coelho Carrard<sup>1,2</sup> 

Camila Mello dos Santos<sup>3</sup> 

Fernando Neves Hugo<sup>4</sup> 

<sup>1</sup>Oral Pathology, Faculty of Dentistry, Federal University of Rio Grande do Sul, Porto Alegre, Brazil

<sup>2</sup>TelessaudeRS-UFRGS, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil

<sup>3</sup>Center of Social Dentistry Research, Faculty of Dentistry, Federal University of Rio Grande do Sul, Porto Alegre, Brazil

<sup>4</sup>Department of Social and Preventive Dentistry, Faculty of Dentistry, Federal University of Rio Grande do Sul, Porto Alegre, Brazil

## Correspondence

Manoela Domingues Martins, Department of Oral Pathology  
– School of Dentistry, Federal University of Rio Grande do Sul, Rua Ramiro Barcelos, 2492/503, CEP 90035-003, Porto Alegre, Brazil.

Email: manomartins@gmail.com

## ORCID

Manoela Domingues Martins  <https://orcid.org/0000-0001-8662-5965>

[org/0000-0001-8662-5965](https://orcid.org/0000-0001-8662-5965)

Vinicius Coelho Carrard  <https://orcid.org/0000-0002-1624-0178>

[org/0000-0002-1624-0178](https://orcid.org/0000-0002-1624-0178)

Camila Mello dos Santos  <https://orcid.org/0000-0001-5354-3699>

[org/0000-0001-5354-3699](https://orcid.org/0000-0001-5354-3699)

Fernando Neves Hugo  <https://orcid.org/0000-0003-2222-7719>

## REFERENCES

- Ather, A., Patel, B., Ruparel, N. B., Diogenes, A., & Hargreaves, K. M. (2020). Coronavirus disease (COVID-19): Implications for clinical dental care. *Journal of Endodontics*, 46, 584–595.
- Bavaresco, C. S., Bragança, S., Vencato, V., Feltes, B., Sória, G. S., Brew, M. C., ... Rodrigues, J. A. (2019). Performance of primary health-care dentists in a distance learning course in pediatric dentistry. *International Journal of Medical Informatics*, 129, 296–302. <https://doi.org/10.1016/j.ijmedinf.2019.06.014>
- Carrard, V. C., Roxo Gonçalves, M., Rodriguez Strey, J., Pilz, C., Martins, M., Martins, M. D., ... Gonçalves, M. R. (2018). Telediagnosis of oral lesions in primary care: The EstomatoNet program. *Oral Diseases*, 24(6), 1012–1019. <https://doi.org/10.1111/odi.12851>
- Centers for Disease Control (2020). *How COVID-19 spreads*. Retrieved from <https://www.cdc.gov/coronavirus/2019-ncov/about/transmission.html>
- Daniel, S. J., & Kumar, S. (2014). Teledentistry: A key component in access to care. *Journal of Evidence-Based Dental Practice*, 14, 201–208. <https://doi.org/10.1016/j.jebdp.2014.02.008>
- Dowd, M. (2020). *Larry David, Master of His Quarantine*. *New York Times*, p. ST1. Retrieved from <https://www.nytimes.com/2020/04/04/style/larry-david-curb-your-enthusiasm-coronavirus-psa.html>
- Harzheim, E., Gonçalves, M. R., Umpierre, R. N., Da Silva Siqueira, A. C., Katz, N., Agostinho, M. R., ... Mengue, S. S. (2016). Telehealth in Rio Grande do Sul, Brazil: Bridging the gaps. *Telemedicine and e-Health*, 22(11), 938–944. <https://doi.org/10.1089/tmj.2015.0210>
- Lima, M. S., Tonial, F. G., Basei, E., Brew, M. C., Grossmann, E., Haddad, A. E., ... Bavaresco, C. S. (2019). Effectiveness of the distance learning strategy applied to orthodontics education: A systematic literature review. *Telemedicine and E-Health*, 25(12), 1134–1143. <https://doi.org/10.1089/tmj.2018.0286>
- Linjawi, A. I., Walmsley, A. D., & Hill, K. B. (2012). Online discussion boards in dental education: Potential and challenges. *European Journal of Dental Education*, 16(1), e3–e9. <https://doi.org/10.1111/j.1600-0579.2010.00662.x>
- Mukhopadhyay, S., Booth, A. L., Calkins, S. M., Doxtader, E. E., Fine, S. W., Gardner, J. M., ... Jiang, X. (S. (2020). Leveraging technology for remote learning in the era of COVID-19 and social distancing: Tips and resources for pathology educators and trainees. *Archives of Pathology & Laboratory Medicine*. <https://doi.org/10.5858/arpa.2020-0201-ED>
- Quinn, B., Field, J., Gorter, R., Akota, I., Manzaneres, M.-C., Paganelli, C., ... Tubert-Jeannin, S. (2020). COVID-19: The immediate response of European academic dental institutions and future implications for dental education. *European Journal of Dental Education*. <https://doi.org/10.1111/eje.12542>
- Roxo-Gonçalves, M., Strey, J. R., Bavaresco, C. S., Martins, M. A. T., Romanini, J., Pilz, C., ... Carrard, V. C. (2017). Teledentistry: A tool to promote continuing education actions on oral medicine for primary healthcare professionals. *Telemedicine and E-Health*, 23(4), 327–333. <https://doi.org/10.1089/tmj.2016.0101>