

# COVID-19 Pandemic: An Opportunity for Using Tele-Dentistry for a Better Dental Care

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## Abbreviations:

COVID-19: coronavirus disease 2019  
PPE: personal protection equipment  
WHO: World Health Organization

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Dear Editor,

The novel coronavirus disease 2019 (COVID-19) pandemic is currently the most important public health issue world-wide, which emerged in Wuhan, China in December 2019.<sup>1</sup> Globally, approximately 500 million people became infected and over six million lost their lives following COVID-19.<sup>2</sup> Due to the transmissibility of COVID-19 through respiratory droplets and aerosols, several preventive measures have been recommended by the World Health Organization (WHO; Geneva, Switzerland) for staying safe, including staying at home, social distancing, using personal protection equipment (PPE) like fitted masks, and self-isolation in case of feeling unwell.<sup>3</sup> To observe the health protocols, people avoided going out unless for very urgent matters such as buying foodstuffs.<sup>4</sup> Fear of becoming infected even led most people to reduce their unnecessary referrals to hospitals or clinics for elective surgeries or routine health care services.<sup>5</sup>

Although this helped prevent the spread of the disease, not receiving treatment for different diseases including dental and oral problems could disrupt public health training programs, delay diagnosis, and complicate the treatment process.<sup>6,7</sup> This was especially important among pregnant women who needed to receive dental care, especially in the second trimester. Nonetheless, studies showed that to reduce any contact with other people, pregnant women mostly delayed or avoided their routine prenatal care, including dental checkups, which might lead to many maternal and neonatal consequences.<sup>8,9</sup> To minimize the negative outcomes of not receiving dental and oral health care services by patients, and to reduce the professional and ethical concerns of dental health workers, several virtual platforms such as blogs, websites, and web-based and mobile-based health applications have been designed and promoted.<sup>10</sup> These platforms have various potentials, including the provision of different services, raising oral hygiene awareness, history taking, examination, diagnosis, consultation, training, treatment, and follow-up.<sup>11</sup> It should be mentioned that the majority of these platforms are focused on providing preventive care and educational services and they are less treatment-based due to the requirement of special infrastructure schemes.<sup>12</sup>

It seems that many people's need for dentistry-related information has been met using search engines. Using the trends of Google search engine (Google Inc.; Mountain View, California USA), with around four billion users world-wide, two recent studies found a steep upward trend in online searches for dental problems and tele-dentistry.<sup>13,14</sup> Additionally, a five-fold increase in the number of searches for "tele-dentistry" and a 30-fold increase for "PPE dentist" were recorded. Moreover, a 40-fold increase in the question "is it safe to go to the dentist" showed a high level of fear of going to the dentist.<sup>14</sup> Fortunately, answers to most questions could be found in valid health-related websites such as WHO. Besides, history taking and examination in virtual platforms indicated a special opportunity for providing oral health services in remote areas. A study by Alabdullah, et al demonstrated that tele-dentistry could be comparable to in-person oral health visits, particularly in situations where access to dental and oral health care was restricted.<sup>15</sup> Furthermore, intraoral scans in online examinations provide efficient screening and the correct triage of patients, which facilitate the process of remote diagnosis and detection of dental issues.<sup>16</sup> Thus, it is considered a feasible and potentially cost-effective alternative to visual examination, and is even an appropriate method for children's dental problems screening that can prevent early childhood dental issues.<sup>17–19</sup> After a correct diagnosis, dentist's consultation and communication with patients can also be performed virtually. It is mainly done via video calls, phone calls, or text messages and plays a critical role in advancing dental health, particularly in case of patients' limited access to health care services.<sup>20–22</sup> A study by Cook, et al revealed that tele-consultations decreased a great number of inappropriate orthodontic referrals to clinics and allowed

dentists to visit more patients at a faster speed.<sup>23</sup> Regarding the treatment of oral diseases or dental problems, tele-dentistry has provided a chance for sharing patients' history, information, and other medical reports among the dentists who are far from each other.<sup>24</sup> A study by Berndt, et al demonstrated that orthodontic specialists could help general dentists in performing interceptive orthodontic treatments for disadvantaged children in restricted areas.<sup>25</sup> Moreover, tele-dentistry has been reported to be a useful and valid method for patient follow-ups by dental general practitioners and specialists, especially after maxillofacial surgeries. It is, in fact, considered as reliable as in-person visits.<sup>26</sup>

These online services can benefit dental tourism, which is one of the most popular and profitable medical tourism segments.<sup>27</sup> They have a variety of advantages for patients, dentists, and the destination country's economy. Being virtually visited by well-known dentists and receiving online examinations and counseling can help reduce travel times and save time and money.<sup>28</sup> Moreover, providing an appropriate patient-doctor relationship and transparency provides a chance for an initial trust for receiving modern technology and high-quality health care services for more specific dental problems in the destination country. In addition, patient satisfaction can help attract more patients, eventually making the market bigger and more profitable in the country. Dentists will also benefit from this online communication.<sup>28</sup> Less commuting to clinics results in more visits and provides the opportunity for making money beyond the direct income of dental clinics. Furthermore, following the development of dental tourism in the destination country, an economic growth will occur, as this generates job opportunities and brings valuable currencies to the destination country.<sup>27</sup>

Nonetheless, there are some factors that reduce people's access to online dental health platforms. Internet access and limited computer knowledge are the main challenges for not using dental telehealth care by people.<sup>29</sup> Besides, as the majority of web- or mobile-based tools are in English, non-English speakers do not seem to be easily able to use them and a translated version is needed.<sup>29</sup> The cost of the telemedicine equipment has also been a matter of concern, and their cost-effectiveness should be checked through preliminary investigations.<sup>30</sup> Moreover, some people have fear regarding the privacy and security of their medical information. Of course, they can use the platforms that meet the standards of the Health Insurance Portability and Accountability Act of 1996, known as HIPAA.<sup>31</sup>

### Conclusion

The recent pandemic can be considered an opportunity encouraging people to use the virtual world more than before, especially in the field of oral and dental health. The advantages of using tele-dentistry outweigh its related risks, and it can help promote the dental tourism industry, as well. Considering the aforementioned opportunities and challenges, and with government's support, companies will be able to design a more appropriate and user-friendly online platform to provide most dental services, which can attract a larger number of patients and improve the industry's profitability.

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