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Letter to Editor

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COVID-19 pandemic: History, aetiology, symptoms, and precautions in dentistry

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Letter to editor

The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) first emerged in a Chinese seafood market in Wuhan city, in December 2019. In February 2020, World Health Organization (WHO) named the virus, coronavirus diseases 2019 (COVID-19). Affecting people all over the world, it has progressed into a pandemic [1]. It is noteworthy that the pace at which COVID-19 has been spreading throughout the world is not the same in every country and that is attributed to several factors including the quality of healthcare system, economic state of each country, and different political approach and actions taken towards the coronavirus pandemic. According to Johns Hopkins University (JHU), more than 185 million people have been infected with the virus to this date (July 2021) [2]. It is therefore clear that COVID-19 has posed a serious threat to the whole world.

As reported by International Committee of Taxonomy of Viruses (ICTV), four genera of the virus exist (α-COV, β- COV, δ- COV, γ-COV). α- and β -COVs infect humans and other mammals, affecting their respiratory system in particular. The other two genera cause disease in birds [1]. Employing Simplot analysis, Zhou *et al.* reported that the genome of COVID-19 is 96% identical to a bat coronavirus (RaTG13). Moreover, their study did not identify any evidence for recombination events in the genome of COVID-19 [3].

The common symptoms of the infected patients are fever, dry cough, myalgia or fatigue, and acute respiratory problems. The disease can lead to progressive respiratory failure due to the alveolar damage and even death. In addition, the less common symptoms observed in patients with positive COVID-19 were sputum production, headache, hemoptysis, and diarrhea. A highly contagious disease, COVID-19 spreads through face-to-face contact and its main transmission route is respiratory droplets. Coronaviruses can survive on different inanimate surfaces from 2 hours to 9 days [3,4].

Filtering facepiece respirators (FFRs) and powered air-purifying respirators (PAPRs) are two types of respirators used to safeguard medical care providers. There is a variety of FFRs, such as N95, KN95, P2 Particulate respirator, and FFP3. In comparison to surgical and homemade masks, the respirators provide a tight seal around the face and nose, which is very effective in protecting the user [5]. In a recent study conducted by Ma *et al.*, it was reported that the efficacy of protection masks against avian influenza virus is as follows: N95 (99.98%), surgical mask (97.14%), and homemade mask with 4-layer kitchen paper and 1-layer cloth (95.15%) [6]. It can be concluded that using a mask decreases the spread of COVID-19.

Based on the occupational risk pyramid developed by the Occupational Safety and Health Administration (OSHA), dental health care providers (DHCPs) are exposed to a high risk of getting infected with COVID-19 during the dental treatment [5]. Therefore, the use of personal protective equipment (PPE), such as dental face shields, protective eyewear, respirators such as N95 or FFP3, gowns, and gloves is an essential precautionary measure in protecting DHCPs from the virus.

In their study, Yu *et al.* reported that 50.26% of all visits to dental clinics in Wuhan in the time period between February 22 and March 2, 2020, were because of endodontic problems and 53.10% of endodontic emergency cases were diagnosed with symptomatic irreversible pulpitis [7]. In light of the foregoing information, the role of the dentist, especially the endodontist, in managing and preventing patients from going to the hospital in such critical circumstances is of significant importance. Furthermore, telemedicine services, such as video calls and exchange of photos are very helpful in managing patients and making decisions.

It is essential to emphasize and inform our patients that keeping good oral hygiene is a top priority at all times. At this critical juncture, due to the high risk of spreading the virus, routine dental procedures must be deferred unless there is an emergency. In case in-person visits are necessary, utmost care is required to reduce the spread of the virus. Research has shown that the use of surface disinfection procedures consisting of 62–71% ethanol, 0.5% hydrogen peroxide or 0.1% sodium hypochlorite can be highly effective, inactivating the virus within one minute [4]. Since dental instruments produce aerosol and splatter, using a rubber dam can be useful in the control of atmospheric bacterial contamination, reducing the inhalation of infective aerosols by the personnel of dental clinics [8]. Another study reported that gargling with mouthwashes, particularly povidone-iodine, may have the potential to decrease cross infection in this disastrous pandemic [9].

Thus, it is recommended that personal protective equipment (PPE), disposable dental instruments, rubber dam, mouthwashes, and minimally invasive procedures for treatment should be used to reduce cross infection of COVID-19 in this pandemic. Finally, during the COVID-19 pandemic, dentists should place priority not only on the dental therapy but also on the patient's mental health.

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