Review Article

Infection Control in Dental Practice During COVID-19 Pandemic: A Literature Review

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Abstract

COVID-19 causes severe pneumonia, which is aided by the SARS-CoV-2 virus. The pathophysiology of the COVID-19 sickness, the unusual transmissibility of SARS-CoV-2, and our age's high level of globalization have all led to the rapid global spread of China's epidemic emergency. For COVID-19 to spread from person to person, it just takes intimate contact with an infected individual. The virus is spread mainly through the inhalation of respiratory droplets, which may be applied when a person with the infection talks, sneezes, or coughs. It is also known that the virus may live in the environment, either in the air or on inanimate objects (known as "fomites"). Dentists are at a higher risk of developing SARS-CoV-2 because they frequently interact closely with patients and are exposed to human fluids such as saliva, blood, and tissue during surgical procedures. Many dental operations emit aerosol, and the possibility of an airborne infection should be recognized. This study seeks to give dentists useful guidelines based on current research that may assist them in preventing the spread of COVID-19 while working with patients.

Keywords: COVID-19, Dentistry, SARS-CoV-2, Prevention procedures, Coronavirus infection, SARS virus

Introduction

Wuhan, the provincial capital of Hubei, is the largest city in central China, with a population of over 11 million people. Many people were affected by a severe form of pneumonia in December 2019 [1]. This pathology had no recognized cause. SARS-CoV 2/human/Wuhan/X1/2019, a novel coronavirus, was discovered on January 9, 2020, after being isolated in pharyngeal and respiratory swabs of hospitalized patients [2-4]. This virus will be remembered as the causal agent when the World Health Organization declares a pandemic on March 11, 2020 [5].

The World Health Organization (WHO) has designated the SARS-CoV-2 virus-caused illness as COVID-19 (an abbreviation generated from the terms CO-rona VI-rus Disease and the year of identification, 2019) [6]. A sore throat or diarrhea might also be a symptom for certain persons. In 80% of patients, the symptoms are not too severe, but in 15%, the symptoms are so powerful that hospitalization is necessary. The last 5% of patients who develop severe dyspnea are sent to the nearest critical care unit [7]. There needs to be more definitive information on the surface stability of SARS-Cov-2 and its capacity for transmission from person to person. Therefore, the same methods used to contain earlier coronaviruses have been implemented.

COVID-19 is transferred largely through respiratory droplets produced after a sneeze or cough [8]. Transmission from an infected person to person occurs mainly through close contact with symptomatic individuals. Infected people may spread the virus to others more quickly when they have symptoms. Still, there is mounting evidence that the virus can be spread from person to person, even when symptoms are minimal or nonexistent [9]. It has also been acknowledged that the virus may be able to live outside of living creatures, either in aerosol or on inanimate surfaces [10]. The virus was found to be alive up to 72 hours after being treated with stainless steel and plastic, where it has a longer half-life (about 5.6 h and 6.8 h, respectively). The quick globalization of the Chinese epidemic emergency was facilitated by the high degree of globalization in our day, the

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How to cite this article: Almofareh AN, Alenazi BB, Alanizy KSA, Alshahrani MF, Alharbi AH, Al-Mutairi SAA, et al. Infection Control in Dental Practice During COVID-19 Pandemic: A Literature Review. Arch Pharm Pract. 2022;13(2):116-22. https://doi.org/10.51847/VgKeSEaVLV

unique transmissibility of SARS-CoV-2, and the pathophysiology aspects of the COVID-19 illness.

Several healthcare facilities, including dentistry offices and clinics, have severely restricted patient access by limiting clinical activities to urgent and non-delayed treatment in an effort to slow the spread of COVID-19. Dentists are at a very high risk of getting SARS-Cov-2 due to the close quarters needed for dental work (often no more than one meter) and the interaction of saliva, blood, and other bodily fluids during surgical operations. Additionally, various dental treatments can result in the production of aerosol [11].

The goal of this study is to offer dentists useful advice based on current understanding that may help them stop the spread of COVID-19, particularly during the post-epidemic phase. The following search terms were used in PubMed to look for a recently published article on the clinical and epidemiological characteristics of SARS-CoV-2 and the spread of COVID-19: "SARS-CoV-2 or 2019-n-CoV" or "COVID-19," "COVID-19 in Dentistry," "Spread of COVID-19," "Surface Stability of SARS-CoV-2," "SARS-CoV-2 and aerosol," "Prevention of COVID-19 Spread"

Materials and Methods

This scoping review utilized studies from the databases such as PubMed, Mediline, ScienceDirect and Web of Science. A comprehensive search was conducted using keywords such as COVID-19; Dentistry; SARS-CoV-2; prevention procedures; Guidelines; coronavirus infection.

Table 1. Inclusion and exclusion criteria

№	Inclusion criteria	Exclusion criteria
1.	Case-control and randomized control studies	Systematic reviews or meta-analyses or expert opinions or narrative reviews
2.	Published between 2012 and 2022	Out of the specified time range
3.	Studies including COVID-19 related infection control	Studies other than COVID-19 related infection control.
4.	English language of publication	Language other than English
7.	In vivo (humans)	In vitro

Results and Discussion

Examination of Patients

In their routine practice, dentists use air-water syringes, water-cooling systems, handpieces, and ultrasonic scalers. Large droplets of water, saliva, blood, and pathogens are discharged from these devices in the form of a visible spray. The creation of these aerosols has the potential to be harmful and is notoriously difficult to control [12]. Because of these risks, comprehensive patient screening is required at any dental office or clinic entrance. The most straightforward strategy to stop the transmission of COVID-19 within a dental office is to identify infected individuals with weak symptoms using a telephone survey before they enter the facility.

According to research by Chinese researchers that was published in the New England Journal of Medicine (NEJM), 88% of COVID-19-positive patients have a fever with a body temperature over 37.5 degrees [13]. Even if only a small fraction of apyretic cases have been identified, a telephone survey might be conducted using a questionnaire that takes into account the most prevalent SARS-CoV-2 infection symptoms, potentially dangerous epidemiological ties, and the time period of transmission.

Treatments that are not essential need to be delayed for at least 14 days. If a patient has experienced a fever within the previous 14 days, there are positive epidemiological correlations, or they exhibit clinical COVID-19 signs or symptoms, they should be urged to see their primary care physician (even with an average body temperature). The patient should start measuring their temperature every 8 hours starting the day before the appointment; if the fever exceeds 37.3 degrees Celsius, the appointment should be delayed for at least 14 days **(Figure 1)**.

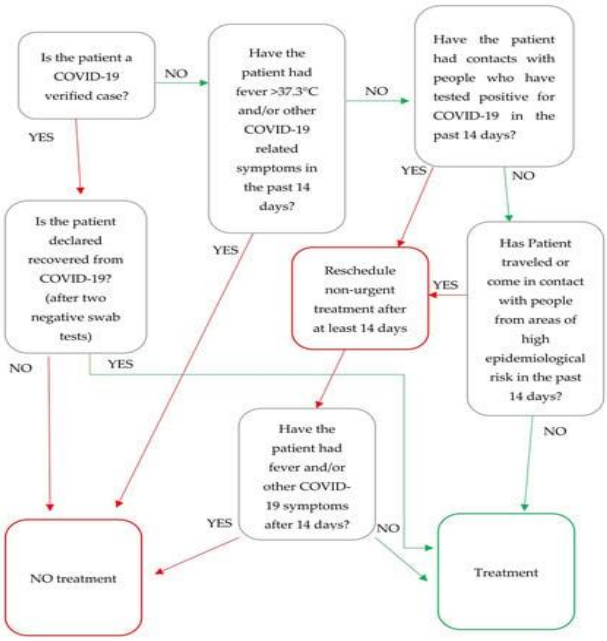

Figure 1. Patient flowchart screening for non-emergency dental care.

Treating a confirmed, potential, or suspected case of COVID-19 at a public hospital with staff who have received the necessary training and have access to the required equipment is preferable. Dental treatments that generate aerosols should be postponed until the end of the day (maybe in a negative pressure or well-aerated environment), and a dental rubber dam should be used.

The Patient's Entrance

Patients are strongly advised not to bring any personal goods with them and to attend alone (no partners or family members), as well as to always wear a surgical mask. For the patient's treatment length, nannies and carers must be given the same rights as the patient and a seat in the waiting area.

These recommendations ought to be given to the patient at the anticipated appointment via a thorough recommendation. The operator will enter the room and, while donning gloves, a filtering facepiece particles 2 (FFP2) respirator, a visor, and a protective gown, take the patient's temperature using an infrared thermometer. If a patient has a temperature greater than 37.3 degrees Celsius and it is not an emergency, the appointment should be rescheduled.

The next step is for the patient to deposit their outerwear, luggage, and backpacks in designated storage areas. After removing the surgical mask, he will be instructed to dispose of it in a sealed container and wash his hands in a hydroalcoholic solution **(Figure 2)**. After being fitted with protective eyewear, shoe covers, a gown, a cap, and a mask, the patient waits in the waiting room until they are summoned to the clinical area. The patient must continue to wear the protective equipment supplied until the clinical procedure is complete.

Figure 2. Hands sanitization with a hydroalcoholic solution.

Appointment Planning and Waiting Room Organization

Since respiratory droplets are the principal means of SARS-CoV-2 transmission, appointments should be scheduled to keep the number of patients in the waiting area to a minimum of two meters [14]. Every treatment should be scheduled with a minimum of 30 minutes to ensure that the waiting area can be kept under control. Create a plan that takes the delay into consideration. Patients above the age of 65 and those who have many chronic systemic diseases are more at risk of contracting COVID-19. It is therefore advisable for them to hold their scheduled meeting as early in the day as possible [15]. For up to 48 hours, SARS-CoV-2 may survive on paper and cardboard [10]. As a result, decluttering the waiting room of ornaments, magazines, newspapers, and posters will aid in cleaning.

Plexiglass walls should be utilized to keep the receptionist and other employees dry if a desk is located in the lobby. The receptionist is required to wear a surgical mask and disposable gloves, which must be thrown away and replaced after each patient. Sterilization is required for all tools used in the billing and administrative procedures that come into contact with patients.

Methods of Obtaining Information at a Dental Office or Clinic

It is against company policy to send an employee into the workplace with a temperature of more than 37.0 degrees Celsius without activating sanitary observation.

- Upon entering the clinic or office, dental staff members must take off their masks, put them in a closed container, and wash their hands for at least one minute with a disinfectant hydroalcoholic solution **(Figure 2)** or soap and running water.
- Workers with individual lockers must change into washable clothes and shoes before entering the facility. After the operation, they must re-sanitize with the hydroalcoholic solution **(Figure 2)**. When working in a dental office or clinic, all employees must keep a minimum of 1.5 meters of separation and always wear a surgical mask. Except when required, they should occupy different dining and relaxing spaces at other times.
- Except when required, they should share different food and sitting places, etc., simultaneously.
- Before a patient enters a clinical area, staff members wear single-use PPE (PPE).
- It has been known from the early Chinese findings that COVID-19 might be spread by the contaminated secretions of eyes, mouths, and noses [16]. Use of personal protective equipment, including visors or protective glasses, disposable gowns with full coverage, respirators or masks, gloves, and headpiece caps, is therefore strongly encouraged.
- Before and while putting on protective equipment, operators should wash their hands thoroughly. Spanish

research found that routine surgical cleaning with soapy disinfectant solutions may modify the bacterial flora, leading to staphylococcal and Gram-negative bacterial colonization. After numerous hand washes, hydroalcoholic gel with a concentration of 62% to 70% also seems to be well tolerated. Additionally, compared to alcoholic hand sanitizers, soapy solutions are connected to much more instances of contact dermatitis [17].

Before a surgical procedure, the World Health Organization (WHO) advises applying 5 mL of an alcohol-based gel to the palm of your hand and rubbing it into the skin surfaces of both palms and forearms for about 60 seconds, or until the gel has entirely evaporated. If you have cuts or scrapes on your hands, the emollients and alcohol in them could sting or burn a little **(Figure 3)**.

Figure 3. Hand-rubbing technique for surgical hand preparation. From WHO guidelines on hand hygiene in health care [18].

Using a Stepped-Up Approach to PPE (PPE)

Regarding personal protective equipment, Lavezzo *et al*. [19] suggested a three-stage process.

Personal protective equipment to avoid exposure to droplets and skin.

Personal protective equipment for airborne, droplet, and contact hazards.

Protective equipment for high-risk medical operations that produce aerosols, including protection against airborne, droplet, and contact hazards (AGMPs).

Droplet and contact precaution personal protective equipment should be used for all medical operations, excluding those with a significant potential for producing aerosols. All participants should wear the following personal protective equipment (PPE):

1. A surgical mask.
2. Eye protection (goggles or procedure mask with face shield).
3. Association for the Advancement of Medical Instrumentation (AAMI) level-two gowns.
4. Gloves that overhang the gown sleeve.

A healthcare professional should wear personal protective equipment (PPE) for airborne, droplet, and contact precautions while performing high-risk medical procedures that generate aerosols in the operating room. The following elements are included in personal protective equipment (PPE) for this treatment:

1. An N95 respirator.
2. Eye protection (goggles or procedure mask with face shield).
3. A head covering.
4. AAMI level-two gowns.
5. Gloves that overhang the gown sleeve.

Wearing personal protective equipment (PPE) for airborne, droplet, and contact precautions is required for medical workers doing high-risk aerosol-generating activities. An N95 respirator, eye protection (goggles or a procedural mask with a face shield), a cap or bonnet, an AAMI level two or three gown, and gloves that extend past the sleeve of the gown are all required for this operation's PPE.

While performing high-risk AGMPs, Moghadas *et al*. [20] advise wearing a covering over the neck so long as it doesn't hinder the operator's mobility. Considering the closeness of the mucous membranes to the channel, the latter is a particularly vulnerable location to contamination. All healthcare providers and workers need thorough training and practice in properly donning and removing PPE. According to research by Burki *et al*. [21], healthcare practitioners often make mistakes while putting on and taking off personal protective equipment. Another common error was failing to adjust the gown around the neck, as well as touching the inside of the dress or glove with a gloved hand [22]. The risk of self-contamination has been demonstrated to increase with the removal of personal protective equipment (PPE) [23, 24], with the risk of hand contamination being at its maximum when gloves are taken off before the gown is taken off [25]. Another study [26] found that having a "doffing spotter" describe the steps of the doffing PPE technique could reduce this threat. In comparison to the general public, frontline healthcare workers (HCW) have a 12-fold higher risk of reporting a positive COVID-19 test, and a global investigation found that HCW with insufficient PPE had a 31% higher risk of catching the virus than those with proper PPE [27]. The risks that medical personnel face are confirmed by this discovery, which emphasizes the importance of adhering to strict infection control procedures **(Figure 4)**.

Figure 4. Operational sequence for putting on Personal Protective Equipment (PPE).

Clinical Procedure

The patient sits in a dental chair unit that has been prepared with a detachable barrier to protect its non-sterilizable components after being appropriately PPE-dressed (see Section 3). Patients are required to take off their surgical masks before the clinical procedure and put them back on when it is finished.

SARS-Cov-2 was continuously found in the saliva of 92% (11 of 12) of the patients investigated, according to clinical evaluations conducted by the Li Ka Shing Faculty of Medicine at the University of Hong Kong [28]. To lessen the amount of viruses in saliva, some experts advise using a mouthwash with 1% hydrogen peroxide-based solutions and rinsing for at least 30 seconds [29]. The SARS-Cov-2 virus has been proven to be vulnerable to oxidizing agents in vitro, but no studies have been done to determine their effectiveness in humans or to look into the potential negative consequences of using these chemicals as mouthwash.

The Diagnosis and Treatment of Novel Coronavirus Pneumonia (5th edition) recommendations released by the National Health Commission of the People's Republic of China state that mouthwash rinses with chlorhexidine are ineffective against SARS-CoV-2 [30]. The usage of the rubber dam during clinical procedures is strongly encouraged in order to stop the spread of aerosols and

potentially infectious biological material. Samaranayake discovered that rubber dams significantly decreased airborne particles by 70% within 1 m of the operational range [31]. The use of high-speed handpieces without anti-retraction valves should be prohibited during the COVID-19 epidemic due to the risk of virus and bacterium aspiration in the air and water tubes, which could result in cross-infection for the contamination of the dental unit [32]. The use of air-water spry syringes must be done with caution and in moderation.

Some authors advise against using intraoral X-ray techniques during the COVID-19 outbreak because they have the potential to cause emetic reflexes and coughing, which could contribute to the creation of aerosols and the spread of contaminated biological enhancement material [33, 34]. Contrarily, the radiation dose provided by intraoral radiographic methods is 3–5 times lower than that of panoramic imaging and 40 times lower than that of cone beam computed tomography (CBCT) [35]. It is crucial to use caution when performing radiography operations to avoid unnecessarily subjecting the patient to ionizing radiation.

With intraoral imaging, sensors need to be double-sealed to avoid perforation and properly cleansed after each usage to prevent the spread of infection. Coughing and gag reflexes may be avoided with appropriate dental and surgical treatments [36]. For instance, an intra-oral scanner is preferable to the more traditional "analogical" methods when taking dental impressions. If the air conditioning is on, closing the treatment room door during interventions is particularly important to prevent the spread of aerosols [37].

Conclusion

Due to the specific transmissibility of SARS-CoV-2 and the pathophysiological characteristics of the COVID-19 illness, dentists and other dental personnel are at an exceptionally high risk of infection. With the right sanitizing procedures and PPE, the spread of SARS-CoV-2 in a dental office may be significantly decreased. Additionally, this virus is a sneaky, undetectable foe that can be spread in a variety of ways. Social distance, acceptable behavioral standards, an appropriate air exchange of all dental office/clinic rooms, and verified instrument sterilizing and surface sanitizing methods can all help to reduce the possibility of the transmission of SARS-CoV-2.

Because of these concerns, conducting a thorough screening of all new patients at the dental clinic or office is essential. In order to stop the spread of COVID-19 inside the dental clinic, the most efficient way to identify infected people with moderate symptoms may be to conduct a telephone poll of patients. When vaccinations or quick diagnostic tests are developed to detect even sick or asymptomatic individuals, preventative methods for the transmission of COVID-19 may surely change as a result of future research. The purpose of this guideline is to support the continuous efforts of dental organizations and authorities to offer thorough and complete official recommendations.

ACKNOWLEDGMENTS: We would like to acknowledge the support of ministry of health.
CONFLICT OF INTEREST: None
FINANCIAL SUPPORT: None
ETHICS STATEMENT: This study was exempted from the ethical requirement.

References

1. WHO. Pneumonia of Unknown Cause—China; WHO: Geneva, Switzerland, 2020.
2. Alghamdi A, Ibrahim A, Alraey M, Alkazemi A, Alghamdi I, Alwarafi G. Side effects following COVID-19 vaccination: A cross-sectional survey with age-related outcomes in Saudi Arabia. J Adv Pharm Educ Res. 2021;11(3):119-25.
3. Bahramy MA, Roozdar-Chaleshtary M, Abbasi V, Amiri-Nikpour MR, Moradi-Joo E. Clinical Features of Guillain-Barre Syndrome in COVID-19 Patients: Aria and Naft Private Hospitals in Ahvaz, Iran. Entomol Appl Sci Lett. 2021;(3):21-7.
4. Magomedova UG, Khadartseva ZA, Grechko VV, Polivanova MN, Mishvelov AE, Povetkin SN, et al. The role of Covid-19 in the acute respiratory pathology formation in children. Pharmacophore. 2020;11(5):61-5.
5. Toubiana J, Poirault C, Corsia A, Bajolle F, Fourgeaud J, Angoulvant F, et al. Kawasaki-like multisystem inflammatory syndrome in children during the covid-19 pandemic in Paris, France: prospective observational study. BMJ. 2020;369.
6. Lauer SA, Grantz KH, Bi Q, Jones FK, Zheng Q, Meredith HR, et al. The Incubation Period of Coronavirus Disease 2019 (COVID-19) From Publicly Reported Confirmed Cases: Estimation and Application. Ann Intern Med. 2020;172(9):577-82.
7. Wei WE, Li Z, Chiew CJ, Yong SE, Toh MP, Lee VJ. Presymptomatic Transmission of SARS-CoV-2—Singapore, January 23-March 16, 2020. MMWR Morb Mortal Wkly Rep. 2020;69(14):411-5.
8. Johns Hopkins University & Medicine. Coronavirus Resource Center: COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at John Hopkins. 2020. Available from: https://coronavirus.jhu.edu/map.html (accessed on 2 March 2021).
9. CDC. How COVID-19 Spreads. CDC's Website. 2020. Available from: www.cdc.gov/coronavirus (accessed on 2 March 2021).
10. NHC. Diagnosis and Treatment Protocol for Novel Coronavirus Pneumonia; National Health Commission of the PRC: Beijing, China, 2020.
11. Harrel SK, Molinari J. Aerosols and splatter in dentistry: A brief review of the literature and infection control implications. J Am Dent Assoc. 2004;135(4):429-37.
12. Wang D, Hu B, Hu C, Zhu F, Liu X, Zhang J, et al. Clinical characteristics of 138 hospitalized patients with 2019 novel coronavirus–infected pneumonia in Wuhan, China. Jama. 2020;323(11):1061-9.
13. Chan JF, Yuan S, Kok KH, To KK, Chu H, Yang J, et al. A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster. Lancet. 2020;395(10223):514-23.
14. Sohrabi C, Alsafi Z, O'Neill N, Khan M, Kerwan A, Al-Jabir A, et al. World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19). Int J Surg. 2020;76:71-6.
15. Gorbalenya AE, Baker SC, Baric RS, de Groot RJ, Drosten C, Gulyaeva AA, et al. Severe acute respiratory syndrome-related coronavirus: The species and its viruses–a statement of the Coronavirus Study Group. BioRxiv. 2020.

16. Gostic K, Gomez AC, Mummah RO, Kucharski AJ, Lloyd-Smith JO. Estimated effectiveness of symptom and risk screening to prevent the spread of COVID-19. eLife. 2020;9:e55570.
17. Li P, Fu JB, Li KF, Liu JN, Wang HL, Liu LJ, et al. Transmission of COVID-19 in the terminal stages of the incubation period: A familial cluster. Int J Infect Dis. 2020;96:452-3.
18. Li C, Ji F, Wang L, Wang L, Hao J, Dai M, et al. Asymptomatic and human-to-human transmission of SARS-CoV-2 in a 2-family cluster, Xuzhou, China. Emerg Infect Dis. 2020;26(7):1626-8.
19. Lavezzo E, Franchin E, Ciavarella C, Cuomo-Dannenburg G, Barzon L, Del Vecchio C, et al. Suppression of a SARS-CoV-2 outbreak in the Italian municipality of Vo'. Nature. 2020;584(7821):425-9.
20. Moghadas SM, Fitzpatrick MC, Sah P, Pandey A, Shoukat A, Singer BH, et al. The implications of silent transmission for the control of COVID-19 outbreaks. Proc Natl Acad Sci USA. 2020;117(30):17513-5.
21. Burki TK. Coronavirus in China. Lancet Respir Med. 2020;8(3):238.
22. Guan WJ, Ni ZY, Hu Y, Liang WH, Ou CQ, He JX, et al. Clinical characteristics of coronavirus disease 2019 in China. N Engl J Med. 2020;382(18):1708-20.
23. Liu J, Liao X, Qian S, Yuan J, Wang F, Liu Y, et al. Community Transmission of Severe Acute Respiratory Syndrome Coronavirus 2, Shenzhen, China, 2020. Emerg Infect Dis. 2020;26(6):1320.
24. Cascella M, Rajnik M, Cuomo A, Dulebohn SC, Di Napoli R. Features, Evaluation, and Treatment of Coronavirus (COVID-19). In StatPearls; StatPearls Publishing: Treasure Island, FL, USA, 2020.
25. Lu CW, Liu XF, Jia ZF. 2019-nCoV transmission through the ocular surface must not be ignored. Lancet. 2020;395(10224):e39.
26. Lee YL, Chu D, Chou SY, Hu HY, Huang SJ, Yen YF. Dental care and infection-control procedures during the COVID-19 pandemic: The experience in Taipei City Hospital, Taiwan. J Dent Sci. 2020;15(3):369-72.
27. Estrich CG, Mikkelsen M, Morrissey R, Geisinger ML, Ioannidou E, Vujicic M, et al. Estimating COVID-19 prevalence and infection control practices among US dentists. J Am Dent Assoc. 2020;151(11):815-24.
28. Patel M. Infection control in dentistry during COVID–19 pandemic: what has changed? Heliyon. 2020;6(10):e05402.
29. Pereira LJ, Murata RM, Pardi V, Mattos FF. Streamlining the dental care during COVID-19 pandemic: updated clinical recommendations and infection control management framework. Braz Oral Res. 2021;35:e046.
30. Induri SNR, Chun YC, Chun JC, Fleisher KE, Glickman RS, Xu F, et al. Protective Measures against COVID-19: Dental Practice and Infection Control. Healthcare (Basel). 2021;9(6):679. doi:10.3390/healthcare9060679
31. Ather A, Patel B, Ruparel NB, Diogenes A, Hargreaves KM. Coronavirus disease 19 (COVID-19): implications for clinical dental care. J Endod. 2020;46(5):584-95.
32. Ayyed AB. Dental practice infection control measurements: Coronavirus Disease (COVID-19) Outbreaks. Int J Clin Pediatr Dentist. 2020;13(3):279.
33. Kochhar AS, Bhasin R, Kochhar GK, Dadlani H. COVID-19 pandemic and dental practice. Int J Dent. 2020;2020.
34. WHO. Multisystem Inflammatory Syndrome in Children and Adolescents Temporally Related to COVID-19; WHO: Geneva, Switzerland, 2020.
35. PHAC. Infection Prevention and Control for COVID-19: Interim Guidance for Outpatient and Ambulatory Care Settings; Public Health Agency of Canada: Ottawa, ON, Canada, 2020.
36. Pittet D, Allegranzi B, Boyce J. World Health Organization World Alliance for Patient Safety First Global Patient Safety Challenge Core Group of Experts. The World Health Organization Guidelines on Hand Hygiene in Health Care and Their Consensus Recommendations. Infect Control Hosp Epidemiol. 2009;30(7):611-22.
37. Gold NA, Avva U. Alcohol Sanitizer. In StatPearls; StatPearls Publishing: Treasure Island, FL, USA, 2020.