REVIEW ARTICLE

Comparative Practices of Dentists during Covid-19 Pandemic

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ABSTRACT

Background: China's city Wuhan originated Coronavirus disease or COVID-19 is a contagious viral impacting all segments of life. Developed countries like America and China are also suffering due to this pandemic. This infectious disease has collapsed the medical and health care system of developing and developed nations as well.

Objective: Present research study has focused on the SARS-CoV-2 impact on dental clinics, dental practitioners, and dental assistants' comparative practices. Furthermore, SARS-CoV-2 syndrome, transmission patterns, and pre-visit and post-treatments practices of dental clinics and hospitals have been also considered in light of policy guidelines and standard operating procedures recommended by major global healthcare organizations.

Materials and Methods: Present research study is qualitative and designed to explore the comparative practices of dental practitioners according to PRISMA guidelines. All relevant data is obtained from secondary sources. Relevant data has been collected via different electronic databases i.e. Science Hub, Google Scholar, Research Gate, PubMed, Scopus, Medline, and Embase. Peer-reviewed and high-impact factors journals are focused on snowball sampling techniques. Major global health bodies, WHO, ADA, CDCP reports, policy guidelines, and standard operating procedures are included in this review. Data analysis is carried out in the descriptive form.

Findings: Effective SARS-CoV-2 is an infectious disease and common symptoms of COVID-19 are cough, throat soaring, fever, headache, flu, and diarrhea. Personnel having short breathing, chest pain, loss of smell, taste and reddened face symptoms are given immediate available treatment and attention by doctors. Dental practitioners and assistants working at dental clinics and hospitals are much aware of remedial and precautionary measures to restrain the spread of SARS-CoV-2.

Conclusion: Present study concludes that SARS-CoV-2 is a contagious virus. Healthcare professionals and clinics are facing major threats of this contagious disease as these employees are the front foot fighters against this contagious disease. Research shows that during this unprecedented time, dentists and other health care must comply with global major healthcare organizations' standard operating procedures, policy guidelines, and necessary safety measures to overcome the risk of covid-19 transmission.

Keywords: *Dentists, Dental Clinics, Practices, SARS-CoV-2, Syndrome, Treatment Patterns.*

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Introduction

Coronavirus disease or COVID-19 is a contagious viral disease caused by a newly discovered coronavirus, coronavirus-2 (SARS-CoV2). Initially, it broke out in Wuhan city of the People's Republic of China in December 2019. This contagious virus had a significant impact on the lives of people worldwide, also thousands of people in China died of it.[1] Most of the people, who faced COVID-19, became prey to severe acute respiratory disease. People who are 60 years of age and over, and those who suffer from medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer, are more likely to develop the serious disease in their bodies and natural immune system.[2]

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COVID-19 disease has collapsed the medical and health care system of developing and developed nations such as America and China where thousands of people have died due to wide spread of this deadly spread of coronavirus.[3] Front foot workers in the current scenario are doctors, nurses, and paramedical staff who are facing severe problems in balancing their social life and providing health services to patients in hospitals.[4] They are more prone to getting disease-ridden yet anyone can get infected with COVID-19 and become seriously ill or die at any age, however, there is no proper treatment in the developed countries of the world.[5] People are stressed regarding the medical problems caused by its rapid spread.[6] The Spread of the disease is due to droplets, direct contact with the virus-carrying person, and aerosols. Production of aerosol in the dental operatory system and dental procedures have a significant relationship with each other; hence, professionals of dental care services are a highly susceptible group of covid-19 infectious diseases.[7] Research indicate that SARS-CoV-19 has a higher rate of spreading in nature through contaminated surfaces, respiratory droplets and contaminated surfaces and through the mucous membrane of the mouth, eyes, nose and via the faecal-oral route.[8,9]

Objectives of the Study

Objectives of the present study are as follows:

1. To identify the mode of transmission, symptoms, and diagnosis of Covid-19.
2. To explore the pre-visit as well as post-visit measures and practices of dental professionals during Covid-19.
3. To identify guidelines that were followed by the dental practitioners while providing services to patients during the Covid-19.

Research Questions

The current literature review focuses on the following research questions to find out comparative practices of dentists during the rise of the Covid-19 pandemic.

1. What are the safety measures and practices adopted by the dental practitioner at their respective clinics to ensure mitigation of the transmission risk of covid-19 to staff working at clinics and patients?
2. What are the pre-visit measures as well as post-treatment measures of patients being observed by dental practitioners and assistants working at dental clinics and hospitals?

Significance of the Study

This study is being done to assess the comparative practices of dentists during covid-19. It is helpful for dental practitioners and associated paramedical staff in providing dental services to patients in a conducive environment by following standard guidelines, standard operating procedures, and practices to avoid the risk of transmission. The findings of the study will provide a framework for maximum output and efficient work performance of the dental workforce and associated healthcare professionals. They will be able to observe safety measures and widely acknowledged practices propagated by world-renowned organizations so that the risk of this viral infectious disease can also be mitigated.

Literature Review

Dental practitioners use the dental armamentarium including handpieces, producing saliva droplets and blood.[10] These droplets and blood contaminate the instruments and tools which were during the provision of dental services to the patients. Resultantly, it can put a significant impact on dental working environments.[11] It is a major health risk for dental practitioners and dental patients as they can get affected by microbial pathogens. Health professionals, dental practitioners, and researchers propagate that the provision of dental services to patients at dental clinics can be a possible source of covid-19 transmission and other diseases such as the Hepatitis B virus and HIV Aids.[12] This viral disease can prove to be fatal and destructive for healthcare professionals and patients.[13] The American Dental Association (ADA) in this regard has suggested to dental practitioners and associated dental paramedics staff to observe propagated safety measures to lessen the risk of transmission of this infectious disease and limit their interventions of emergency dental services to patients as it commonly generates saliva droplets and blood during patient's treatment which can be a cause of viral disease transmission to the dental practitioner and patients.[14,15,16] Dental practitioners and their staff must ensure the disinfection of dental instruments, tools, and other associated gadgets regularly and

they should also ensure the pre-procedural rinse for the patients regularly during the provision of treatment.[16,17,18] This association suggests that dental professionals use personal protective equipment (PPE), anti-retraction hand-pieces, and rubber dam isolation reducing the risk of transmission to a bare minimum. Hence, it is need of time that healthcare professionals should adopt such safety measures while providing healthcare services to patients at hospitals mitigating the risk of contagion.[19,20]

Materials and Methods

The present descriptive study is designed to explore the comparative practices of dental practitioners and associated healthcare professionals working at dental clinics and hospitals. This research study is qualitative and all the relevant data is obtained from secondary sources i.e. earlier published articles and research papers in peer-reviewed journals. Several researches on contemporary practices of dental practitioners and associated health care professionals during the SARS-CoV-2 at dental clinics and hospitals at been conducted. This study focuses on contemporary practices, pre-visit, and post-treatment measures of dental services provisions at dental clinics and hospitals. Rapid technological advancement and digitalization have brought significant changes in the modes and dynamics of every field. Similarly, the emergence of technology has also brought a revolution in the field of dental practices. The following section summarizes some of the most relevant studies in this area, highlighting key mechanisms of comparative practices of dental practitioners during the covid-19 pandemic. Synonyms, variants and relevant terms for the current research study have been used in various electronic databases i.e. Science Hub, Google Scholar, Research Gate, PubMed, Scopus, Medline, and Embase. Terms used are Covid-19, Dentists Issues and Challenges, SARS-CoV-2, Novel-Covid-2019, Health Care Professionals, Dental Practitioners, Dental Assistants, and Dental Clinics. Terms have also been searched separately i.e. transmission, health risks, symptoms, Treatment pattern, policy guidelines, Personal Protection Equipment, Dentistry, Infection Control, Tele-dentistry, and protocols. Criteria for selecting relevant papers was an in-depth search within the peer-reviewed journals and high impact factors journals publications through a snowball sampling technique and some other related journals, articles, and research papers focused on this research study. A similar method was used by Westhuis et al., in their research study.[21] In the following section, a further review is carried out concerning the empirical articles, major health bodies i.e. World Health Organization, American Dental Association, Center for Disease Control and Prevention reports, policy guidelines, standard operating procedures, and reports have been also included for the present study. Furthermore, data analysis is carried out in descriptive form for a better understanding of the nature of the study according to PRISMA guidelines.

Results and Discussion

Results of the current study focused on relevant published articles, research papers, and health bodies' regulatory practices and guidelines findings, the PRISMA flow chart has been mentioned in fig. 1.

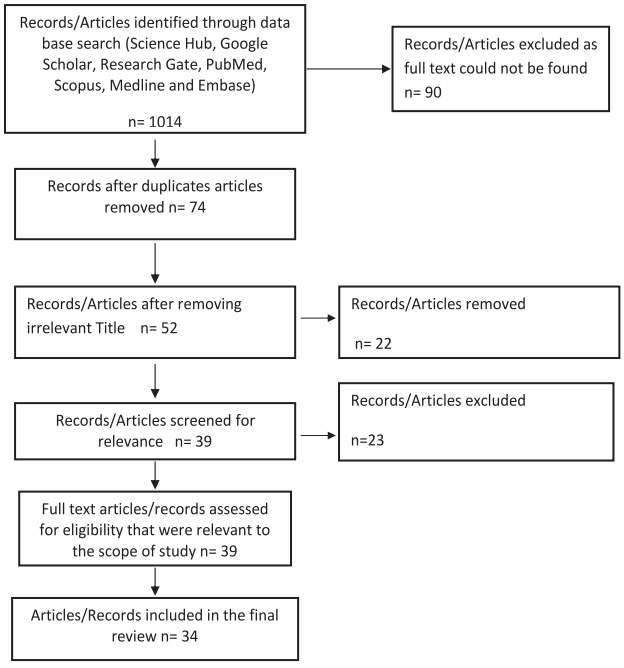

Fig 1: PRISMA Flow Chart

Most of the published articles and research papers were descriptive and narrative reviews due to the rapid change of covid-19 infectious disease information with every passing day. The limiting factor at the time of the current study was that excessive data was not available, and

Institutions were opening and closing at short notice

due to which in-depth study was not possible. The findings are as follows:

Transmission of the SARS-CoV-2 Pandemic

Covid-19 is an infectious disease disseminated due to human interaction. Covid-19 is comprised of angiotensin which turned it into enzyme-2 which lies in the lower respiratory tract. Transmission of COVID-19 is possible due to tiny droplet particles covering a distance of 2 meters and having exposure of almost 15 minutes. These tiny particles of droplets remain as aerosol and are transmitted from the infected person sneezing and coughing towards the normal person.[3,5,22] Transmission of this infectious disease is possible through the process of inhalation, direct mucous, and ingestion. Spagnuolo et al., conclude that the growth duration of this disease varies between 5 to 14 days.[6,7,8] Transmission of this infectious disease is highly infective in the early days of covid-19 carriers during the maturity period of the disease.[14,23]

SARS-CoV-2 Syndrome

SARS-CoV-2 is an infectious disease having symptoms like cough, throat soaring, fever, headache, short breathing, flu, and diarrhoea. Severe symptoms of this deadly infectious disease are short breathing, chest pain and red face which are treated as emergency cases and given immediate available treatment and attention by health professionals.[15,17] Kochhar et al., argued the importance of familiarity for dental practitioners and assistants with contemporary research findings of early syndromes and signs of SARS-CoV-2.[1] Loss of smell and taste is another self-diagnostic syndrome of covid-19. Infected personnel carrying symptoms should act responsibly self-isolate and seek the advice of doctors to constrain risk of transmission.[1,24]

Pronouncement Procedure of SARS-CoV-2

Wang et al., conclude that a person carrying covid-19 is diagnosed positive after undergoing a PCR test in which case he is a positive covid-19 carrier.[19,25] The report of Coronavirus disease 2019 stated that a single nasopharyngeal swab early in course of the disease is almost 70% sensitive and that cannot be reliable instinctively.[4] To et al. states that covid-19 exists in self-collected saliva specimens of 91.7% of patients, which is considered a possible way of disease diagnosis.[20] Major health organizations and individual countries' federal health ministries have also introduced rapid testing procedures that have reduced the workload of hospitals, so that the risk of transmission could be minimized.[26,25]

Managerial practices at dental clinics & hospitals.

It is the need of the hour that dental practitioners and other associated staff at dental clinics and hospitals be fully aware of remedial and precautionary measures to restrain the spread of SARS-CoV-2 while providing dental services to patients. According to the findings of Harrel and Molinari, most common source of infectious disease for covid-19 pandemic and pathogens transmission is aerosol droplets.[26,27] Therefore, dental practitioners and dental assistants need to observe safety measures to control the spread of covid-19. Dental health care practitioners are required to observe strict infectious control strategies while providing pre and post-services to patients at hospitals. In this regard, several major health bodies for instance American Dental Association, World Health Organization, the Federal health authorities' policy guidelines, local clinics and hospitals' standard operating procedures must be observed strictly to overcome the spread of this deadly infectious disease from carriers to normal people. These dentists have to be cautious.[21]

Pre-visit dental practitioner's practices and safety measures

Results of several research studies indicate that in the recent scenario of the covid-19 pandemic, dental practitioners and other associated staff deal with the dental patient through tele dentistry.[28] Dental practitioners during tele dentistry advise the patients and inquire about their present situation.[29] Tele-screening of dental patients is done regarding suspected symptoms of covid-19 with a detailed previous health history regarding fever, flu, headache, throat soaring, short breathing, chest pain, body pain, and coloured face which are considered common symptoms of covid-19.[28] During this phase of tele screening, if dental practitioners found some patients having similar kinds of symptoms, then their treatment of physical checkups are delayed about three weeks and these kinds of patients are advised telemedicine to treat their disease.[29] Somehow, these dental practitioners

attend emergency cases on priority by following safety measures and standard operating procedures given by major health organizations and local hospitals' policy guidelines.[28,29] Reports of the different organizations stated in their findings that dental practitioners should also use the medium video calls for checkups of dental patients and necessary advised laboratory reports must be shared through electronic gadgets, using e-mails with the consent of the patients so that patients can get better virtual treatment from the dentists. Dentists and assistants must ensure that all necessary instruments and offices are disinfected. To ensure social distancing, seating arrangements must be arranged such that there should be 6 feet distance between chairs. All magazines, journals, periodicals and chronicles must be removed from seating areas and offices. Cleaning, disinfection materials, and hand sanitizers in hospitals must be ensured.[24]

SOPS to visit dental clinics and hospitals:

I. Patients should be given a facility for online appointments and they must be informed about their appointments through calls and messages. Attendants should not be allowed except for direly needed patients. Patients should be allowed in dental hospitals and clinics after checking out individual body temperatures. Patients and attendants must be provided with face masks and hand sanitizer to contain the spread of covid-19 transmission.[24]
II. When a suspected covid-19 patient is brought to a dental clinic and hospital for the operation, a negative pressure/airborne infection, an isolation room should be allocated for treatment so that exposure to contagious virus covid-19 transmission could be mitigated towards dental healthcare staff providing services and other dental patients visiting at clinics.[27] High efficient particulate air (HEPA) filters may be used to disinfect air inside isolation rooms.[18]
III. Research on the viability of SARS-Cov-2 on cardboard and copper instruments must be verified so that these instruments may be used instead of stainless steel instruments and cardboard be used as a barrier against the spread of this contagious infectious virus.[5]
IV. Disposable devices should be used, and their disposal should be carried out carefully as infectious medical waste towards the disposed of places.[30]
V. Alcohol waste hand rub should be frequently used and hands must be washed when getting visibly dirty.[31,1]
VI. Use of personal protective equipment (PPE), for instance a face mask, hand gloves, long sleeves gloves, over gowns, eyewear including the side shields, full face shields, and hair cover/ hoods are highly recommended for dental practitioners and other associated health care staff by the major health care organizations to combat the risk of transmission.[32,33]

Post-Treatment dental practitioner's practices and safety measures

Necessary safety measures and practices are being observed by dental practitioners and assistants during corona to combat the risk of covid-19 transmission. Major health institutes globally are issuing their policy guidelines and advisories to observe these practices strictly.

I. All personal protective equipment must be used and they should be disposed of properly according to biomedical waste protocols.[24,34]
II. All safety face shields and glasses used by dental practitioners and assistants during treatment must be disinfected regularly and after each patient's treatment.[24,34]
III. Dental health care workers must use ABHR after each patient's treatment practices.
IV. Dentists must ensure follow-up checks of dental patients carrying covid-19 symptoms after every 7 days for further necessary actions.[27]
V. All dental practitioners and auxiliary staff in dental clinics and hospitals should be screened regularly for Covid-19.
VI. Administration of hospitals must ensure a record of daily in and out of staff and patients concerning necessary details.[22]
VII. All those healthcare professionals and associated staff above the age of 60 years working at dental clinics and hospitals must be granted leave and they should not be allowed to continue offering services during this crucial time.[25]
VIII. After treatment is provided to patients, dentists

and assistants must ensure disinfection of all instruments and medical waste must be disposed of properly.[23]

Conclusion

The current study concludes that SARS-CoV-2 is a contagious virus that has impacted the lives of people. It has disturbed almost all segments of life. The situation of uncertainty prevails among all personnel and people are even bound to remain at their own houses. Healthcare professionals and clinics are facing major threats of this contagious disease as these employees are front-line fighters against this contagious disease. Researches show that during this unprecedented time, dentists and other health care must comply with global major healthcare organizations' standard operating procedures, policy guidelines, and necessary safety measures to overcome the risk of covid-19 transmission. Dental practitioners must ensure that patients visiting dental clinics and hospitals should get covid-19 screening and those patients should be disinfected fully by using the necessary safety measures. All patients and attendants must ensure face masks while entering hospitals. Personal protective equipment must be ensured by all dental practitioners, assistants, and auxiliary staff that it should be used once and disposed of properly according to biomedical waste protocols. Dental hospitals and clinics should encourage tele dentistry and telemedicine facilities for non-urgent patients. When a suspected covid-19 patient is brought to dental clinics and hospitals for operation, a negative pressure/airborne infection, an isolation room should be allocated for treatment so that exposure to contagious virus covid-19 transmission could be mitigated towards dental healthcare staff providing services to other patients visiting hospitals. Meanwhile, pre-visit and post-treatment standards operating procedures formulated by major healthcare organizations are being strictly followed by these dental practitioners and dental assistants to overcome the risk of contagious disease transmission.

REFERENCES

1. Kochhar AS, Bhasin R, Kochhar GK, Dadlani H. Provision of continuous dental care for oral oncology patients during & after COVID-19 pandemic. Oral Oncology. 2020; 106: 104785. doi: 10.1016/j.oraloncology.2020.104785
2. Baghizadeh Fini M. Oral saliva and COVID-19. Oral Oncol. 2020: 104821. doi: 10.1016/j.oraloncology.2020.104821
3. Suri S, Vandersluis YR, Kochhar AS, Bhasin R, Abdallah MN. Clinical orthodontic management during the COVID-19 pandemic. The Angle Orthodontist. 2020; 90: 473-84. doi: 10.2319/033120-236.1
4. World Health Organization. Coronavirus disease (COVID-19) outbreak situation. WHO; 2020 [cited 2020 Apr 24].
5. Lo Giudice R. The severe acute respiratory syndrome coronavirus-2 (SARS CoV-2) in dentistry. Management of biological risk in dental practice. International journal of environmental research and public health. 2020; 17: 3067. doi: 10.3390/ijerph17093067
6. Spagnuolo G, De Vito D, Rengo S, Tatullo M. COVID-19 outbreak: an overview on dentistry. International journal of environmental research and public health. 2020; 17: 2094. doi: 10.3390/ijerph17062094
7. Belser JA, Rota PA, Tumpey TM. Ocular tropism of respiratory viruses. Microbiology and Molecular Biology Reviews. 2013; 77: 144-56. doi: 10.1128/MMBR.00058-12
8. Lu CW, Liu XF, Jia ZF. 2019-nCoV transmission through the ocular surface must not be ignored. Lancet (London, England). 2020; 395: e39. doi: 10.1016/S0140-6736(20)30313-5
9. Wilder-Smith A, Chiew CJ, Lee VJ. Can we contain the COVID-19 outbreak with the same measures as for SARS? The lancet infectious diseases. 2020; 20: e102-7. doi: 10.1016/S1473-3099(20)30129-8
10. Riou J, Althaus CL. Pattern of early human-to-human transmission of Wuhan 2019 novel coronavirus (2019-nCoV), December 2019 to January 2020. Eurosurveillance. 2020; 25: 2000058. doi: 10.2807/1560-7917.ES.2020.25.4.2000058
11. Bai Y, Yao L, Wei T, Tian F, Jin DY, Chen L, et al. Presumed asymptomatic carrier transmission of COVID-19. Jama. 2020; 323: 1406-7. doi: 10.1001/jama.2020.2565
12. Lai CC, Liu YH, Wang CY, Wang YH, Hsueh SC, Yen MY, et al. Asymptomatic carrier state, acute respiratory disease, and pneumonia due to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2): Facts and myths. Journal of Microbiology, Immunology and Infection. 2020; 53: 404-12. doi: 10.1016/j.jmii.2020.02.012
13. Guo H, Zhou Y, Liu X, Tan J. The impact of the COVID-19 epidemic on the utilization of emergency dental services. Journal of dental sciences. 2020; 15: 564-7. doi: 10.1016/j.jds.2020.02.002
14. Chan JFW, Yuan S, Kok V. "A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster," 5e Lancet. 2020; 395: 514–23. doi: 10.1016/S0140-6736(20)30154-9
15. Fang L, Karakiulakis G, Roth M. Are patients with hypertension and diabetes mellitus at increased risk for COVID-19 infection? The lancet respiratory medicine. 2020; 8: e21. doi: 10.1016/S2213-2600(20)30116-8
16. Kochhar AS, Kochhar GK, Jain M, Dadlani H, Bhasin R. Biologic restoration: a treatment modality for restoring primary teeth. International Journal of Scientific Research. 2020; 9: 1-2.

17. Yang J, Zheng Y, Gou X, Pu K, Chen Z, Guo Q, et al. Prevalence of comorbidities in the novel Wuhan coronavirus (COVID-19) infection: a systematic review and meta-analysis. International Journal of Infectious Diseases. 2020; 94: 91-5. doi: 10.1016/j.ijid.2020.03.017.
18. Kim HJ, Ko JS, Kim TY. Recommendations for anesthesia in patients suspected of COVID-19 Coronavirus infection. doi: 10.4097/kja.20110
19. Wang P, Anderson N, Pan Y, Poon L, Charlton C, Zelyas N, et al. The SARS-CoV-2 outbreak: diagnosis, infection prevention, and public perception. Clinical Chemistry. 2020; 66: 644-51. doi: 10.1093/clinchem/hvaa080
20. To KK, Tsang OT, Yip CC, Chan KH, Wu TC, Chan JM, et al. Consistent detection of 2019 novel coronavirus in saliva. Clinical Infectious Diseases. 2020; 71: 841-3. doi: 10.1093/cid/ciaa149
21. Westhuis D, Ouellette PM, Pfahler CL. A comparative analysis of on-line and classroom-based instructional formats for teaching social work research. Advances in Social Work. 2006 ; 7. doi: 10.18060/184
22. Van Doremalen N, Bushmaker T, Morris DH, Holbrook MG, Gamble A, Williamson BN, et al. Aerosol and surface stability of SARS-CoV-2 as compared with SARS-CoV-1. New England journal of medicine. 2020; 382: 1564-7. doi: 10.1056/NEJMc2004973
23. Fiorillo L, Cervino G, Matarese M, D'amico C, Surace G, Paduano V, et al. COVID-19 surface persistence: a recent data summary and its importance for medical and dental settings. International journal of environmental research and public health. 2020; 17: 3132. doi: 10.3390/ijerph17093132
24. Xu J, Li Y, Gan F, Du Y, Yao Y. Salivary glands: potential reservoirs for COVID-19 asymptomatic infection. Journal of dental research. 2020; 99: 989. doi: 10.1177/0022034520918518
25. Meng L, Hua F, Bian Z. Coronavirus disease 2019 (COVID-19): emerging and future challenges for dental and oral medicine. Journal of dental research. 2020; 99: 481-7. doi: 10.1177/0022034520914246
26. Peng X, Xu X, Li Y, Cheng L, Zhou X, Ren B. Transmission routes of 2019-nCoV and controls in dental practice. International journal of oral science. 2020; 12: 1-6. doi: 10.1038/s41368-020-0075-9
27. Harrel SK, Molinari J. Aerosols and splatter in dentistry: a brief review of the literature and infection control implications. The Journal of the American Dental Association. 2004; 135: 429-37. doi: 10.14219/jada.archive.2004.0207
28. Ather A, Patel B, Ruparel NB, Diogenes A, Hargreaves KM. Coronavirus disease 19 (COVID-19): implications for clinical dental care. Journal of endodontics. 2020; 46: 584-95. doi: 10.1016/j.joen.2020.03.008.
29. Maret D, Peters OA, Vaysse F, Vigarios E. Integration of telemedicine into the public health response to COVID-19 must include dentists. International Endodontic Journal. 2020; 53: 880. doi: 10.1111/iej.13312
30. Ti LK, Ang LS, Foong TW, Ng BS. What we do when a COVID-19 patient needs an operation: operating room preparation and guidance. Canadian Journal of Anesthesia/Journal canadien d'anesthésie. 2020; 67: 756-8. doi: 10.1007/s12630-020-01617-4
31. Wax RS, Christian MD. Practical recommendations for critical care and anesthesiology teams caring for novel coronavirus (2019-nCoV) patients. Canadian Journal of Anesthesia/Journal canadien d'anesthésie. 2020; 67: 568-76. doi: 10.1007/s12630-020-01591-x
32. Carrouel F, Conte MP, Fisher J, Gonçalves LS, Dussart C, Llodra JC, et al. COVID-19: a recommendation to examine the effect of mouthrinses with β-cyclodextrin combined with citrox in preventing infection and progression. Journal of Clinical Medicine. 2020; 9: 1126. doi: 10.3390/jcm9041126
33. Quan FS, Rubino I, Lee SH, Koch B, Choi HJ. Universal and reusable virus deactivation system for respiratory protection. Scientific reports. 2017; 7: 1-0. doi: 10.1038/srep39956
34. Fini MB. What dentists need to know about COVID-19. Oral oncology. 2020; 105: 104741. doi: 10.1016/j.oraloncology.2020.104741