Coronavirus disease 2019: emerging challenges and Brazilian dental education

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Received May 23, 2020. Approved May 25, 2020.

ABSTRACT

Coronavirus disease (COVID-19) emerged in China in late 2019, spreading rapidly to more than 216 countries. Due to the characteristics of the dental environments and procedures, there is a greater risk of cross-infection between the oral health team and the users of this service. For dental offices, dental schools, and their associated hospitals, located in areas (potentially) affected by COVID-19, rigorous and effective infection control protocols have being urgently developed by the competent regulatory agencies, both nationally and internationally. In addition, the pandemic had an immediate and dramatic impact on dental education, as institutions are now facing the challenge of reorganizing their infrastructure and teaching methods to face the possible consequences of this new reality, preserving and fostering continuous progress future professionals. In this sense, the objective of this study is to present important information related to the new acute respiratory syndrome caused by coronavirus-2 and its impact on Dentistry, addressing the main biosafety guidelines that must be adopted in clinical care, as well as discussing changes in Brazilian dental education. against the COVID-19 pandemic.

Descriptors: COVID-19. Coronavirus infections. Infection Control. Dentistry. Dental Education.

1 INTRODUCTION

A new disease caused by a coronavirus strain (COVID-19) was identified in China in late 2019 and, due to its rapid spread on a global scale, the World Health Organization (WHO) announced that this outbreak constituted an emergency of public health of international interest[1]. Previous outbreaks of coronavirus include severe acute respiratory syndrome (SARS-CoV) and Middle Eastern respiratory syndrome (MERS-CoV), responsible for hundreds of deaths in China and Saudi Arabia, respectively. However, severe acute respiratory syndrome-2 (SARS-Cov-2) appears to be more infectious and lethal compared to previous syndromes[2].

Research focused on the development of vaccines and treatment options against SARS CoV-2 has being developed, but it will certainly not be available to help fight this first wave of the pandemic[3]. Meanwhile, humanity continues to be affected by profound changes in the production model, in social behavior, and economic conditions on the world stage4. Dentistry, as well as other fields of health sciences and other productive sectors, rethought their work processes in the light of the pandemic reality[4-7].

The oral health team is among the professional groups most at risk of being infected with COVID-19 and becoming possible vectors of community transmission[8]. In Brazil, non-emergency treatments are suspended and most dental schools in the country have their activities interrupted[9,10]. With that, at that moment, it is opportune for changes to occur in the provision of educational and dental care activities, to safeguard patients, students and employees health, maintaining attention to change control in the environment and local or national policies, with support to students' academic progress[6].

People involved in dental activities need to be aware of the characteristics of COVID-19, its modes of transmission, and protective measures necessary to provide care during and after the pandemic[8,11]. In this sense, the present study aims to present important information about coronavirus disease and its impact on Dentistry, highlighting the main guidelines for biosafety, as well as discussing new changes in Brazilian dental education in the face of the COVID-19 pandemic.

2 SEVERE ACUTE RESPIRATORY SYNDROME CORONAVIRUS - 2

A viral disease capable of triggering respiratory problems such as pneumonia, dry cough, and dyspnoea appeared in China at the end of 2019[12]. The growing increase in new cases worldwide has raised a major concern of health agencies5. Genetic analyzes have identified the disease pathogen as a new strain of coronavirus (CoV), whose natural host of origin is the bat[13].

The transmission of the virus between humans can occur through direct transmission (coughing, sneezing, and inhalation of contaminated droplets) and through cross-contact with the oral, nasal, ocular mucosa, and through contaminated environmental surfaces. Furthermore, COVID-19 can also be proven transmitted directly or indirectly through saliva[8]. There is no evidence of a vertical transmission route, however, researchers discuss the plausibility of a SARS-CoV-2 infection route through fecal organic matter, mainly affecting socially vulnerable communities without access to adequate basic sanitation conditions[14]. Still in this context, it is important to highlight that the transmission of the virus can occur through contact with asymptomatic patients, which still requires attention in the care of transmission, since we must consider all individuals as potentially contaminated[15].

In early 2020, the new SARS-CoV-2 outbreak was determined to be a public health emergency of international interest by WHO, wich was officially declared as a new pandemic, known as the disease caused by the new coronavirus, was officially declared[16]. As of May 25, 2020 – 1:51 pm - WHO has already accounted for about 5.105.881 confirmed cases globally, with more than 333.446 deaths. Brazil is the second country with the highest number of cases (310.087) and deaths attributed to COVID-19 (22.013)[17].

3 IMPACT OF COVID-19 IN DENTISTRY

The impact of COVID-19 is modifying the maintenance of health services, making it necessary to discuss the adaptation of innovative work methods and tools, since health professionals present a potential risk of infection during clinical practice[18]. Wang *et al.* (2020) conducted a study to assess the characteristics of Chinese patients hospitalized for COVID-19 and demonstrated that 29% of the inmates were frontline health professionals against the pandemic[19].

Although dentistry takes on a secondary role at this time, patients and the oral health team can be exposed to pathogenic microorganisms (viruses and bacteria) that affect the oral cavity and respiratory tract of individuals[20]. The peculiarities of dental care contribute to a higher risk of infection for professionals due to the specificity of procedures that involve face-to-face communication with patients, frequent exposure to saliva, blood and other body fluids, as well as the handling of piercing-cutting instruments[21].

Aerial dissemination of SARS-CoV is a well-reported fact in the literature, as dental studies show that various procedures performed in the office produce ways of spreading spread of the virus in the clinical environment[22]. The moment some dental devices, such as high and low-speed pens, come into operation, a large amount of aerosol and droplets mixed with the patient's saliva or blood will be generated[20]. These microparticles and/or aerosols are small enough to remain in the air for a long time before settling on environmental surfaces or even being inhaled into the respiratory tract[23].

The studies by Van Doremalen *et al.* (2020) and Peng *et al.* (2020) demonstrated that SARS-CoV-2 remained infectious in experimentally generated aerosols, showing a reduction in the potential for infection only after a period of three hours[23,24]. As a result, transmission through contaminated droplets and aerosols becomes more than a constant concern in dental clinics and university dental hospitals, considering that it is difficult to avoid the generation of large amounts of aerosols contaminated by infected fluids[18]. These conditions require greater care with the organization of the office, in the same way as they suggest caution during clinical care, and the correct disinfection of instruments and work equipment[20].

Khader et al. (2020) assessed the level of awareness, perception, and attitude towards COVID-19 and infection control in Jordanian dentists and noted that although professionals in the country were aware of the symptoms, mode of transmission and measures to control the virus, many had a limited understanding of the extra precautionary measures that protect the dental team and other COVID-19 patients[25]. Similarly, in their study of a multinational approach, Kamate *et al.* (2020) observed that the best scores of knowledge, attitudes, and dental practices were associated with a higher degree of qualification and years of clinical practice[26].

The pandemic impacts on Dentistry are varied ones, mainly because the period of social isolation limits clinical practice[27]. This can

influence the overload of health services due to the repressed demand, the worsening of clinical conditions and the organization of oral health care, as well as leading to numerous financial losses for dental professionals[11, 27].

4 DENTAL CARE AND BIOSAFETY MEASURES

The experiences of oral health professionals in clinical practice varied considerably depending on the social context[6]. European nations began to implement the restriction of the population's access to dental offices. In these countries, academic dentistry institutions have adopted timely changes in the provision of education and clinical care, to maintain service to the population and the continuity of teaching[7].

In Brazil, a country in Latin America with the highest number of people infected and killed by COVID-19, the Ministry of Health chose to authorize the performance of emergency procedures in the Unified Health System (SUS) and by limiting non-elective procedures in the activity autonomous[9]. The public institutions Dentistry courses in the country, which was responsible for providing a considerable portion of oral health care for Brazilian population, have their academic activities interrupted due to the need to adapt their teaching methodology and infrastructure in a way that they can safely receive their students and the population[28].

National bodies such as the National Health Surveillance Agency (ANVISA)[29] and the Federal Council of Dentistry (CFO)[30], as well as important international institutions such as the American Dental Association (ADA)[31] and the Center Disease Control and Prevention (CDC)[32], published guidelines for the orientation of dental care. In general, the suggested measures has aimed at the biosafety management of the patient and work team, encompassing several changes that professionals must adopt in the redesign of the physical space of the office and the technical procedures performed.

During the pandemic outbreak, elective procedures for at least two weeks if the individual has symptoms or a known history of exposure and is not performed on individuals positive for SARS-CoV-2[5,30]. The suspension of non-emergency treatment is recommended, while other emergency clinical conditions, such as external purulent drainage, severe pain, and hemorrhage, should receive maximum attention by the dentist[29,31,32]. Chart 1 presents some elective and non-elective clinical conditions for dental treatment during this period.

When there is the diagnosis of emergency conditions, the main biosafety measures must be carefully adopted in clinical care, especially during the expansion in the number of cases infected with COVID-19 (chart 2).

Meng *et al.* (2020) described the biosafety measures adopted at the School of Stomatology Hospital of Wuhan University (HEUW), China. Before the implementation of the new protective measures, there were confirmed cases of cross-infection between patients and two hospital nurses.

The infection was possibly limited only to these subjects because the biosafety prevention strategies used during the clinical work of other health professionals prevented the disease transmission. In addition to the measures mentioned in chart 2, the HEUW team carried out divisions in the sectors of the teaching hospital, according to the levels of environmental infection and access to the different sectors by the same individual, which was mediated by strict disinfection protocols[5].

Chart 1. Presentation of clinical cases according to the need for urgent and emergency treatment during the COVID-19 pandemic

NON-ELECTIVE TREATMENTS	ELECTIVE TREATMENTS
Severe dental pain due to pulp inflammation	Routine prophylaxis
Pericoronitis or pain in the third molar	Mild dental pain
Postoperative osteitis, dry cavity dressing change	Maintenance of periodontal treatment
Localized abscess or bacterial infection, resulting in localized pain and edema	Dental procedures for aesthetic purposes
Dental fracture resulting in pain or trauma to the soft tissues	Tooth restoration including treatment of asymptomatic carious lesions
Dental trauma with avulsion/dislocation	Surgery (tooth extraction and asymptomatic periodontal surgery, implantology, orthognathic, among others)
Final crown/prosthesis cementation if temporary restoration is lost, broken or causes gingival irritation	Treatment of non-carious cervical lesions
Replacement of temporary sealing in endodontic access openings in patients with pain	Prosthetic adjustments
Cutting or adjusting a wire or orthodontic appliances that perforate or ulcerate the oral mucosa	

Source: *American Dental Association*

Although biosafety is essential and the basis of all dental care, it has been not taught as a mandatory subject in several educational institutions in Brazil. Students acquire the necessary knowledge to prevent the transmission of diseases in the course first subjects, in which they are presented to patients.

In a study by Arantes *et al*. (2015), some Brazilian academics from the Dentistry course, despite being aware of the risk of cross-infection, reported that they do not comply with the biosafety standards provided by ANVISA, the Ministry of Health and the institutions' biosafety manual[33]. A recent systematic review and meta-analysis that included studies from Brazil, the United Kingdom, and France, evaluating the adherence of students from dental institutions in adopting hygiene procedures, it also did not provide encouraging information and found that hand hygiene was not even performed by 50% of the total number of students[34].

5 DENTAL EDUCATION AND COVID-19 PANDEMIC

Dentistry training is a traditional and important undergraduate course in the area of health sciences in Brazil. The minimum workload of undergraduate students is 4,000 hours, a large part of which should be used to assist patients through practical laboratory activities in outpatient clinics and dental clinics[35].

The curricular structure of the Dentistry course has been working with different perspectives of looking at the world and health education. The perspectives of social indicators, population realities, and public health programs enable the training of dental surgeons with a generalist, humanistic, critical and reflective view, trained to carry out activities related to the population's oral health, based on technical and scientific rigor[35].

In the current pandemic context, the challenges related to education for dental schools, as well as their affiliated hospitals, are significant[36]. Unlike medical education, teaching in dentistry requires a high demand for practical activities in dental clinics, that bring together many students in collective physical environments, which cannot be replaced by consultations carried out in the

telehealth modality, as a measure adopted in some medical courses in the country[37].

Chart 2. Basic recommendations for dental care during the COVID-19 pandemic.

RISK SCREENING
- Perform careful risk screening to assess the presence of symptoms of COVID-19 and to assess previous exposure to risk situations, such as recent travel and a history of contact between humans. Also, through risk screening it is also possible to establish the assessment of the urgency and treatment possibilities. Initial communication must be established through telephone calls or the use of digital applications that allow the sending of images and video files (WhatsApp, Instagram, Skype, among others).
WAITING ROOM
- The waiting room must have an environment measuring 1.2 meters per person, with constant ventilation and a minimum distance of 1 meter between the chairs. At the entrance to the site, there must be installed a bactericidal mat and dispensers with alcohol gel or 70% alcohol-based solution for hand hygiene. The shared use of materials such as pens and clipboards, and magazines, newspapers, and collective materials in the waiting room should be removed. Accompanying persons should only occur in specific cases, such as in caring for patients with special needs, children, and the elderly.
ODONTOLOGICAL OFFICE
- The clinical environment must be closed, with a minimum area of 9 m^2. Collective offices must have a distance of at least 0.8 meters at the headboards and 1m at the sides of each chair, between 2 chairs there must be a distance of 2 meters, with a mechanical barrier between them. Individual boxes in collective clinics must be isolated, avoiding the spread of aerosols. - Cover surfaces such as benches and auxiliary trolleys with disposable and waterproof fields. Triple syringes must have disposable tips. - Prefer extra oral radiographs, such as panoramic or conical beam computed tomography to intraoral radiographs to reduce the stimulus to salivation and cough. - Carry out continuous aspiration of residual saliva and, if possible, with a high power suction system (vacuum pump).
CLINICAL CARE
- Professionals must perform dental care with a waterproof apron, cap, gloves, surgical mask, and surface protections that must be used during care and discarded after each care in an infectious wastebasket. Glasses and face shields (face shields) must be used in the care of people with flu syndrome, inside the office, and can be disinfected and reused after each consultation. In procedures in which the generation of aerosols occurs, it is mandatory to use a face respirator (N95 masks or similar). - To reduce infection during clinical care, pre-procedure mouthwash with 0.5 to 1% hydrogen peroxide or 0.2% aqueous povidone-iodine solution is essential. The service must be performed with four hands and the control of aerosol production must be done with the use of manual materials, the use of a rubber dam and the use of a high-powered suction and vacuum cleaner, always avoiding the use of ultrasound, bicarbonate jet, high and low-speed pens, 3-way syringe and high volume saliva ejectors.
CLEANING ANG DISINFECTION
- The cleaning of the most contaminated area of the office, a region made up of a dental chair and stool, spit pan, hoses, electrical cables, and other peripheral equipment handled by the dentist or assistant, must be performed using water and neutral soap and disinfection performed with hypochlorite. 1% sodium or 70% alcohol. The walls and floors must be cleaned in one direction, using a cloth or sponge and, afterward, dried with clean cloths. - All dental instruments must be previously decontaminated with enzymatic detergent before cleaning, packaging, and sterilization. Sterilization by physical means must occur with the use of moist heat (autoclave), according to the manufacturer's guidelines.

Sources: National Health Surveillance Agency; Federal Council of Dentistry; Ministry of Health

Dentistry courses are ahead of the obstacle of developing, with agility and creativity, means to ensure the continuing education of the future dental workforce[7]. New contingency plans have being developed to be carried out when returning to academic activities, and while the suspension of face-to-face classes continues, remote teaching is used to generate reflections for future practice in the dental clinic and the field of university extension.

Corroborating with the Association for Dental Education in Europe (AADEE), American Dental Education Association (ADEA) and Ordinance 343 of the Ministry of

Education (MEC) of March 17, 2020, the Brazilian Association of Dental Education (ABENO) recognizes that the remote classes represent a temporary strategy for teaching dentistry as long as the pandemic situation of the new COVID-19 remains[28]. In a note, ABENO also reaffirms its commitment to safeguard students' rights to quality training, to voice in institutional decision-making processes, and to equity in access to the digital resources used in this period[28].

The suspension of face-to-face education and clinical patient care activities for an indefinite period is a huge and unprecedented obstacle in the field of dental education. The interruption of activities in university clinics enabled a temporary change from the traditional curriculum to a remote teaching model in some dentistry courses in the country[7]. In turn, virtual learning should be used when appropriate, with adequate training of the faculty and wide access to the technologies available to students[5].

Virtual learning environments, such as Moodle, Google-for-education, and Classroom, are widely used for distance learning (DE) and were created with a proposal to “learn in collaboration”, in an online environment. Among the resources and activities available on these platforms, we highlight the opinion forums, chats, structured questionnaires, didactic exercises, as well as rooms for collective meetings by videoconference[38]. During the pandemic outbreak period, these tools can be used for online lectures, case studies and learning tutorials based on clinical problems, encouraging self-learning[7].

In Brazil, about 90% of Federal Universities have chosen not to fully adhere to remote education, while 78% of private institutions have adopted it during the outbreak of the pandemic. Other educational institutions, although maintaining some type of distance educational activity, point out that these do not replace regular educational content[39].

One of the main difficulties of Distance Education in Federal Universities is the democratization of access to this technology for students, considering that most of them do not have adequate resources to monitor virtual content in their homes. Equity in student access to infrastructure and technology resources can directly influence the teaching actions carried out by Dentistry courses in this period.

It is evident about the difficulties that this part of the student body finds in accessing appropriate hardware for distance education activities, as well as access - of good quality - to the world wide web. Data from the V National Survey of Socioeconomic and Cultural Profile of Undergraduate Students from Higher Education Institutions highlight the disparities among Brazilian students, with half of them belonging to low-income families, who do not have access to the internet and can also have lack of specific physical spaces to study at home[40]. Released in 2019, a national approach survey found that 58% of households in Brazil do not have access to computers and 33% do not have internet. Among the lower classes, access is even more restricted, which is in line with the data found among university students from public institutions[41].

In addition, several family and social conditions impact diversity and the ability to study, from physical and mental health in times of isolation and pandemic to domestic study spaces and conditions, through the various tasks of students and teachers and their housing conditions[42].

The use of these technologies in education is still considered a novelty since a large part of the faculty opts for traditional

teaching methods. Many university professors did not undergo adequate training that involved some type of learning with the use of these virtual platforms, in the same way, that many of them have not properly been trained to apply their teaching methodologies using these spaces yeat[43]. In this sense, considering the fact that the interruption of face-to-face classes due to the COVID-19 pandemic occurred abruptly and unexpectedly, and that there is a need for continuing education for students, the country's higher education institutions also face the challenge of training their students. teaching staff to carry out these activities.

The moment of social detachment enabled adaptation and new ways to disseminate knowledge. The Federal University of Rio Grande do Sul (UFRGS), Federal University of Campina Grande (UFCG), and Federal University of Uberlândia (UFU) recently developed online courses aimed at teacher training and innovation of didactic-pedagogical procedures in the teaching-learning in distance learning mode. In general, the courses are composed of experiences of activities in the virtual environment, experiments with the configuration of tools and support materials.

Tiradentes University (UNIT), a private reference institution in the Northeast of Brazil, has carried out several initiatives that come from the Dentistry course. Among them, the intensive work of academic leagues with special tutoring from their teachers, as well as partnerships with Postgraduate Programs for presentations at online events with themes related to the context of COVID-19. UNIT was the pioneer in the massive use of the Google for Education platform in Brazil and with that offers all its students unlimited access to the contents of the platform, at no cost in the cellular data franchise.

In the south of the country, the Dentistry courses at the Pontifical Catholic University of Rio Grande do Sul (PUC-RS), Lutheran University of Brazil (ULBRA), and Catholic University of Pelotas (UCPel) are fulfilling their mandatory hours through theoretical activities via virtual learning environment. Evaluation tests and complementary work have also been carried out using these tools.

Although these methodologies are promising, it is interesting to highlight that this is not the reality of Dentistry courses at public institutions in the country. Most of these schools have their clinical activities interrupted, with virtual teaching materials being passed on in a complementary manner, so that as soon as they return, they can proceed with the academic programmatic content regularly.

From this, it is notable that Dentistry courses should develop their activities according to the social context of their students and teachers. Mobile applications could be used to establish an open channel of communication with academics7. Also, for the transmission of recent information on infectious diseases, preventive methods, as well as for assessing the degree of access of these students to the technological resources available in their homes.

Because of the fear and anxiety shown by the dental community concerning COVID-19, psychological coping mechanisms and strategies must be created to maintain calmness and the correct execution of the professional practice. The fear that dentists have of becoming infected with COVID-19 can be reduced by meticulous follow-up of biosafety recommendations.

The current dental curriculum broadly discusses basic infection control, especially the risks of blood-borne infections, such as Human

Immunodeficiency and Hepatitis B viruses, and recommends universal precautions to prevent blood-borne diseases. However, infections transmitted by respiratory droplets and the generation of aerosols appear to be rarely addressed[36].

Once again, we emphasized that these preventive measures must be perpetuated in the clinical routine so that the spread of these aerosols is controlled by biosafety protocols. Therefore, it is important to use remote teaching activities to train students in the correct use of personal protective equipment (PPE) and to carry out protocols, helping them to develop appropriate knowledge and attitudes in infection control.

It is also essential that schools use this moment to work on specific knowledge about the main oral disorders that affect the Brazilian population since after the return of activities; the repressed demand will need dental care to care for the oral complications that have accumulated in this period. Perez *et al.* (2020) warned about the importance of continuing education in oral cancer during an outbreak of COVID-19[44], considering mainly that the late diagnosis of this condition can result in a worse prognosis of the case and even result in high mortality and morbidity[27]. Therefore, it is essential to keep students and professionals up to date, in addition to preparing them with a focus on primary care, rapid identification, and diagnosis of patients after returning to clinical practice.

Institutions must prepare themselves to forecast risks and organize their contingency plans that do not include only the current moment. These measures, after the pandemic context, must be followed and respected in the dental clinic environment, as well as the aspects related to the biosafety and protection of students, teachers, and employees. Planning for the future clinical practice of Dentistry in collective environments must strictly follow the guidelines of ANVISA, the Federal Council of Dentistry, the guidelines of the Contingency Plans for Clinical Management, Human Infection by COVID-19 of the Ministry of Health, and the recommendations of the Ministry of Education.

To improve education on the containment of infectious diseases, dental schools will also need to consider adopting a high-level infection control monitoring policy through the establishment of infection control committees and units. These committees must have the active involvement of the faculty, students, and directors, enabling better sanitary conditions, asepsis, biological risk control, and disposal of infectious waste.

Even before the emergence of COVID-19, in previous SARS-CoV and Mers-CoV outbreaks, Dentistry had already reformulated its biosafety guidelines to prevent the spread of these diseases in the dental office. The control of infection by aerial aerosol limitation is not new, but it has been applied only, when there are greater risks of contamination[45,46]. As a result, it is questionable what the necessary standard of PPE and security protocols will be after the COVID-19 pandemic. There should be a general reorganization of the services and infrastructure of the clinics, especially about the turnover of students, staff and patients in the course facilities, as well as in the provision of collective offices concerning the spacing and isolation of dental units and in controlling the circulation of air conditioning.

6 CONCLUSION

Several agencies, universities, and companies are working hard to develop faster tests and seek measures to prevent and treat COVID-19 infection. While this is not

possible, oral health professionals and services must be aware of the current recommendations that guide dental practice, based on the official publications of the Federal Council of Dentistry, the National Health Surveillance Agency, and the Ministry of Health. Dentistry schools must update themselves as to the current reality, incorporating technological variations in traditional education, bringing remote alternatives permanently in their curricula. Teachers can train themselves and improve their teaching skills, as well as students to use this technology to build knowledge. Furthermore, infection control education needs to be stimulated and expanded in the curriculum of Dentistry courses and students must be properly trained in preventing cross-infection, so that they have the knowledge and the ability to impact the community, helping them during the pandemic.

RESUMO

Doença por Coronavírus 2019: desafios emergentes e o ensino odontológico brasileiro

A doença por coronavírus (COVID-19) surgiu na China no final de 2019, disseminando-se rapidamente por mais de 216 países. Devido às características dos ambientes e procedimentos dentários, há um maior risco de infecção cruzada entre a equipe de saúde bucal e os usuários desse serviço. Para consultórios odontológicos, escolas de odontologia e seus hospitais associados, localizados em áreas que são (potencialmente) afetadas pelo COVID-19, protocolos rigorosos e eficazes de controle de infecções estão sendo urgentemente desenvolvidos pelas agências reguladoras competentes, tanto a nível nacional, quanto internacional. Além disso, a pandemia teve um impacto imediato e dramático na educação odontológica, visto que nesse momento as instituições estão à frente do desafio de reorganizar sua infraestrutura e seus métodos de ensino para encarar as possíveis consequências dessa nova realidade, preservando e fomentando o progresso contínuo de seus futuros profissionais. Nesse sentido, o objetivo deste trabalho é apresentar importantes informações relacionadas a nova síndrome respiratória aguda por coronavírus-2 e seu impacto na odontologia, abordando as principais orientações de biossegurança que devem ser adotadas nos atendimentos clínicos, bem como discutir as mudanças no ensino odontológico brasileiro frente à pandemia de COVID-19.

Descritores: COVID-19. Infecções por Corona vírus. Controle de Infecção. Odontologia. Ensino Odontológico.

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