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ETHICAL DILEMMA IN DENTISTRY PRACTICE DURING COVID 19 PANDEMIC

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ABSTRACT. The dental medical services were forced to follow the decisions of the various national governments that declared a state of emergency and consequently the dental offices were closed for long periods. The present theoretical paper focuses on the moral and ethical aspects related to the patients' access to dental services and to dentists' activity (from interdiction of practice to re-opening, with strict preventive rules to combat de spread of infection). The article presents the situation of Romanian dentists during the first six weeks of the pandemic, and it analyses the struggles of patients and doctors to access and to provide dental services during COVID 19 pandemic.

Keywords: *ethics, dentistry, Romania, pandemic, medicine, COVID 19.*

REZUMAT. ***Dilema etică în practica dentară în timpul pandemiei COVID 19.*** Serviciile medicale dentare au fost nevoite să urmeze deciziile diferitelor guverne naționale care au declarat starea de urgență și, în consecință, cabinetele stomatologice au fost închise pentru perioade lungi de timp. Prezenta lucrare teoretică se concentrează pe aspectele morale și etice legate de accesul pacienților la serviciile stomatologice și la activitatea stomatologilor (de la interdicția practicii până la redeschiderea, cu reguli preventive stricte pentru a combate răspândirea infecției). Articolul prezintă situația medicilor stomatologi români în primele șase săptămâni ale pandemiei și analizează luptele pacienților și medicilor de a accesa și de a oferi servicii stomatologice în timpul pandemiei COVID 19.

Cuvinte cheie: *etică, stomatologie, România, pandemie, medicină, COVID 19.*

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Introduction

The outbreak of the COVID 19 pandemic has caused multiple transformations in the social, economic, educational, and medical terms. The negative effects of the pandemic were suddenly felt on all levels and in all types of countries, regardless of their socio-economic level or the severity in which they were affected.

Medical services were overwhelmed by the number of patients, and the media presented numerous cases with strong emotional and moral impact: situations in which doctors had to choose to which patient they should give a chance at life and provide mechanically assisted ventilation.

Manufacturers of medicines and medical equipment were also overwhelmed. And in this case, the supply of materials, medicines and medical equipment provided a real media crusade. The export of sanitary materials was partially stopped and the chase after the purchase of medicines to fight the Coronavirus infection became a real issue of national importance.

While some medical services were overwhelmed by the infected patients, other branches of medicine were forced to stop working. The dental medical services were forced to comply with the decisions of the various national governments that declared a state of emergency, and, consequently, the dental offices were closed for long periods, for months in a row, in the attempt to diminish the spread of the virus. For example, in China, routine dental care was suspended in January 2020 and three months later it started to get back to normal. (Meng et al., 2020)

Few scientific data on the speed and extent of the spread have led health professionals and health policy-makers to reconsider the decisions and indications of preventive behaviours. For example, wearing a surgical mask has been a hotly debated topic, not only at the level of medical institutions or researchers but also at the level of the *World Health Organization*, which has repeatedly returned to the recommendations, as data from various research were emerging.

Dental consultations were discontinued, and emergency services operated only to assist in serious cases. The fear of infection, especially among dental services was extremely high. Private offices and clinics, however, remained closed. Patients undergoing dental treatment were forced to postpone it until an unspecified date. The role of dental professionals in preventing the transmission of COVID-19 was evaluated as being critically important. While all routine dental care has been suspended in many countries experiencing high rates of COVID-19, there was a need for an urgent reorganization of the activity of dental teams, so that they be provided with appropriate personal protective equipment. The purchase of effective protective equipment in dental activity has become a priority, as well as the training of medical staff on how to sort patients, procedures to combat

infection, how to undress protective equipment, the efficiency of disinfection of the workspaces and behaviour, if dentists are suspected of showing signs of disease. In dentistry, doctors are well trained in what concern the transmission of infection and they are remarkably familiar with occupational health issues, such as hepatitis B and hepatitis C, and risk assessment. (Moodly et al., 2018) But many studies which have been developed and published since January 2020 showed that COVID-19 may be airborne through aerosols formed during medical procedures or indirectly through saliva and blood. So, these possible ways of transmission of COVID 19 infection put dentistry specialists at the highest risk among medical services providers. (Coulthard, 2020a)

Financial loss

The suspension of the activity had dramatic consequences on the financial situation of the dental clinics but also on the dentists. Dentistry education was also affected. While students enrolled in dentistry faculty were banned to develop practical stages in clinics, even the continuation of the education was suspended. Whereas in the case of dental education, both at the bachelor's degree and the continuous training levels, the activities were quickly reorganized and the theoretical activity moved to the virtual environment, the practical activity of both students and dentists continued to suffer.

The primary moral response in case of a pandemic is to save lives. All healthcare providers have a moral obligation to care for their patients. Human life has priority over the economic collapse. But, after several weeks and months of severe lockdown and financial and economic disaster – on the familial, social, and sometimes national level – governments had to reorganize the economic activity and to diminish the severity of restrictions. Huge amounts of money were invested in health services and immense costs were associated with medical services provided for each infected patient. So, therefore, the chain between the medical, social, and economic fields cannot be broken. The right of the sick patient to health must be respected as well as the right of the healthy patient to have access to normal life in society.

Many healthcare regulatory bodies all over the world took a stand on the increased risk of dentists losing their income. The governments from different countries with financial power along with dental regulatory bodies proved that they have understood the gravity of the situation and have offered support to dental practices. The Canadian government set up an Economic Response Plan on 18 March 2020, including dentists' support. (Department of Finance, Canada, 2020) The British Dental Association also declared the support for losses due to the suspension of routine dental care. (British Dental Association, 2020).

On the other hand, re-opening the clinics under the new conditions imposed by the guidelines (special sanitizers, medical equipment, and more protection rules) burden the clinics, hospitals, and dentists even more, from the financial point of view. (Farooq, 2020)

Professional associations and guidelines

Policy-makers and leaders from dentistry services sustained the need for continuing the activity: "the need to engage in a spirit of collaboration, looking out for each other, our patients, especially our vulnerable patients, our staff and our referrers (…) the need to take seriously our own mental health and well-being and plan to support others in our oral surgery community. Keep calm, but plan ahead, and use appropriate personal protective equipment" sustained Coulthard (2020b), president of *British Association of Oral Surgeons*.

American Dental Association (ADA) proposed key steps to be taken by dentists and nurses in addition to the standard universal precautions. Among the guidelines were the following ones: a complete anamnesis about the patients' recent travel history; assessing signs and symptoms of RTI; recording patients' body temperature; mouth rinsing with 1% hydrogen peroxide prior to the commencement of any dental procedure; using a rubber dam and high volume suction during procedures in order to diminish the risk to be in contact with blood and saliva; and frequently cleaning and disinfecting public contact areas including door handles, chairs and washrooms, considering the virus resistance as it was revealed by several studies in the very recent literature focusing on COVID 19 infection. (Ather, 2020) Currently, dental regulatory authorities such as the ADA are urging dentists to conduct only emergency dental treatments. (Peng et al., 2020)

UK General Dental Council developed some guidelines for remote consultation and prescription. It was suggested that patient safety must be the priority, and the identity of each patient must be checked and verified. Dentists should be able to collect sufficient information regarding the patient's health and conditions to be able to prescribe the medication safely.

European Federation of Periodontology (EEP) proposed a protocol – a dental management protocol for dentists highlighting precise steps that must be followed: initial phone triage in order to assess the patient's risk profile, the need to organize the clinical agenda and waiting lists accordingly. The EFP also

suggested a strict protocol on patients' arrival and additional protection equipment for both patients and the dental team. Also, the organization recommends that disinfection of the working field via mouth rinse should be carried out for each patient. (EEP, 2020)

Patients inform consent during COVID 19 pandemic

In their article, Dave et al (2020) mentioned the necessity to reorganize dental interventions and treatment strategies taking into consideration the new pandemic period. The authors proposed that patients with substantial swellings can progress to life-threatening emergencies, which can increase risks in the setting of reduced healthcare availability. For such patients, "extractions of the causative pathogenic teeth should be prioritised over the restorative rescue, and input from dedicated oral surgery and oral and maxillofacial services and close follow-up should be instigated as locally appropriate. This approach has many benefits, including stewardship of antimicrobials, but is a deviation away from routine dentistry that should be thoroughly discussed with patients. Decisions on undertaking treatment should therefore be made with appropriate patient consent".

On the other hand, the confidentiality of data about patients determined a dilemma. Does the patient always declare the truth about their physical health, travel, and personal contacts? Is the patient always aware of the necessity of disclosure of the truth about their physical symptoms in order to protect also the dentist? So, both patients and dental health professionals (dentists and nurses) are at a bilateral risk of being exposed to viruses that can be transmitted through the oral cavity and respiratory tract during dental visits.

Both *asymptomatic* and *presymptomatic* patients that are in contact with the dentist could be a source of infection for the medical staff. "*Asymptomatic patients*" were reported in scientific literature as individuals who test positive but do not have any of the hallmark symptoms of being infected with COVID-19 at the time of the test. On the other hand, some patients may never show physical symptoms, but others may develop symptoms later and are more accurately defined as "*presymptomatic*" (Kimbal et al., 2020) Both categories of *asymptomatic* and *presymptomatic* patients are major sources of virus transmission, as they are covert and show no warning signs to dentists and nurses at the time of contact.

Caring for the physical and mental health of dentists during COVID 19 pandemic

Empirical, biological, and clinical evidence supports that oral mucosa is an initial site of entry for SARS-CoV-2 and that oral symptoms, including loss of taste/smell and dry mouth, might be early symptoms of COVID-19 before fever, dry cough, fatigue, shortness of breath, and other typical symptoms occur. Loss of taste and smell were identified as appearing in the early symptom of COVID-19 before fever. In a study by Chen et al 92020) it was proved that self-reported loss of taste and smell is much stronger in predicting a positive COVID-19 diagnosis than self-reported fever. Other symptoms support the hypothesis that the oral cavity, particularly tongue mucosa might be an initial site of infection by SARS-CoV-2. Dentists and dental researchers could play a more active role in the early diagnosis, prevention, and treatment of COVID-19 and its related research.

In a recent study conducted by Ahmed et al (2020), the authors conducted an online survey addressed to dentists from 30 countries. The results presented by the researchers proved that there were high levels of anxiety and fear related to infection with COVID 19 among dentists. The authors found that the majority of dentists from all countries were afraid of getting infected with COVID-19 from either a patient or a co-worker and while treating a patient who was coughing or a patient suspected to be infected with COVID-19, 90% they were anxious. Almost ¾ of dentists felt nervous when talking to patients in close vicinity and were afraid of getting quarantined if they got infected. Almost all respondents declared that they were afraid of carrying the infection from dental practice to their families. The anxiety rate concerning the cost of treatment if they got infected was 73%, while 86% felt afraid while they learnt about the consequences of infection and mortality rates because of COVID-19. Also, the study showed that more than half of the participants wanted to close their dental practices until the number of COVID-19 cases starts to decline. The results of this study presented the impact of the pandemic on dentists' personal and professional life.

Current situation of dental services in Romania

In Romania, according to current norms, there are two types of dental practitioner offices: private practices organized under different forms, and public practices, which can be found within schools, university campuses, public health institutions and dental emergency practices within emergency departments of hospitals.

Out of the total number of dental offices, the public ones make up approximately 5%. This number is relatively insignificant when compared to the total number of the country's population, particularly in rural areas where dental practices are almost non-existent. (INSSE, 2020)

We can find two types of services within the public health system. The first category, where medical services are free of charge, are represented by medical offices within schools and emergency wards and the second category consists of „personal contribution – co-pay" services where we can find medical offices on university campuses and public health institution medical offices. (INSSE, 2020)

In regards to the quality of dental labour, there is a big difference between private practices and public dental offices, mainly because dental services offered in schools and emergency wards, which are free of charge, are very limited in scope and are also limited to a certain number of procedures. School dental offices only treat children who are enrolled in that institution while emergency wards offer solely emergency treatments which are meant to calm the pain, stop any bleeding, and urgently treat any existing traumas.

Considering these aspects and because the earnings of the general population are well below the European average, with a significant percentage of the population living at the subsistence level, the access to quality dental services is limited.

Aspects related to dental offices during the COVID-19 pandemic

Once the State of Emergency was instituted through Presidential Decree 195/14.03.2020, certain restrictions were imposed in Romania in an attempt to slow down the spread of COVID-19 infection. Later, through Military Ordinance No 2/21.03.2020, dental offices within the country were shut down because the COVID-19 virus has an aerial way of transmission and dental work is a constant generator of aerosols, therefore making dental practices one of the most vulnerable areas in regards to the risk of disease transmission. However, the ordinance did not apply the same restrictions in the case of emergency dental offices within the hospital's emergency wards. Because these public wards would not have handled the large number of people that needed dental help and because they are not present in a sufficiently large number nationally (some areas of the country not benefiting from such emergency dental wards at all), certain dental offices which were able to comply with supplemental hygienic and sanitary measures meant to stop the spread of the virus were reaccredited to serve the general population. Subsequently, The Dental Medical

College in Romania came up with a number of recommendations regarding the manoeuvres which can be safely practised within the dental offices, as well as the necessary equipment for adequate protection which became mandatory through the Health Minister's Order No 767/2020. All these measures were taken in accordance with existing legislation and firmly respect the recommendations made by international health organizations that aim to stop the spread of COVID-19.

After the state of emergency was lifted and was replaced by the state of national alert, these regulations remained unchanged, the only difference being related to dental manoeuvres which can be undertaken with certain limitations.

Violating the right to oral health by banning the functioning of dental offices

The right to health is ensured through the Constitution of Romania but, due to the current context of a global pandemic, this right was sadly infringed upon, and not only in the case of dental practitioner's offices. The rapid closure of these establishments left thousands of patients with unfinished dental work and dental treatments which can later lead to tooth loss and an unfavourable evolution of treatment. For example, a periapical tooth abscess needs sustained treatment because of the high risk of reinfection while unsupervised orthodontic equipment can lead to unwanted adverse effects.

The right to oral health during the two months of the state of emergency was also violated through the lack of emergency medical practices. In this field there are certain areas in the country such as Brasov, Satu-Mare, Bistrița-Năsăud, Buzău or Teleorman where there are no such dental offices within the emergency wards of local hospitals and where, during the first weeks of the state of emergency, there were no or very few working dental practices which treated a limited number of patients, leaving others to travel hundreds of kilometres to neighbouring counties in order to continue their treatments, mainly because not all dental afflictions can be treated through telemedicine using general drug treatment.

Later, because of these shortages, certain private dental offices could open if they disposed of the necessary sanitary materials and equipment to safely offer dental assistance to patients. These private offices could function only after receiving approval from the local Public Health Directorate. The number of such open dental offices was relatively small because, being private practices,

the exorbitant costs entailed in the acquisition of supplemental protective and disinfectant equipment, as well as the limit placed on certain procedures, made them economically unfeasible.

The small number of dental offices, the mandatory scheduling of all patients, respecting strict disinfection times, offering assistance only in cases of major emergencies (pain that will not go away under medication, bleeding and traumas) as well as the closure of dental radiology laboratories through which a presumptive dental diagnosis was confirmed during clinical examination have all led to a part of the population not to have access to dental medical services, with the people often being angry and aggressive towards the medical personnel.

Violating the vulnerable people right to oral health

Because the earnings of the population are not evenly distributed and because most dental practices are private, a part of the population does not benefit from dental medical services. To help them, school or university dental offices, as well as practices set up by non-profit organizations, came in, even if this was observed in a small percentage.

Once the state of emergency was instituted and the teaching activities were suspended along with the medical activities of school clinics, this category of the vulnerable population was perhaps the most affected because the only places where they could ask for dental help were the public ones which either did not exist in their localities or did not cope with the very high demand.

From the point of view of receiving dental medical assistance in this category of the vulnerable population, we can include, along with people with low income, all the people living in rural environments. Many rural areas within Romania are faced with a severe deficit in both public and private dental practitioner's offices. We can go as far as to say that public dental health offices are non-existent in most rural areas of Romania.

This category of people also had to suffer during the state of emergency, mainly the elderly, who were unable to easily travel to cities where emergency dental offices existed. These people mostly benefited from telemedicine and were prescribed several drugs for pain management or infection reduction. Many times, though, these drugs were not efficient and resulted in an increased mental and physical effort which put people at risk for contacting COVID-19 by reaching cities where they could benefit from the proper dental treatments.

The sudden interruption of dental treatments

Oral health is an important part of human health, contributing to the general well-being of a person. A precarious state of dental health has an important impact on physical and mental health as well as an impact on the social integration of the population. (Holden et al., 2020)

The sudden interruption of dental treatments and not following them up for a period of three months due to the closure of dental practices within the country from March 2020 onward has had short term consequences but, perhaps more severely, it caused medium and long term adverse effects. All categories of patients had to suffer due to these interruptions, both physically, because of developing complications, and mentally, because of the discomfort caused by not receiving the proper treatment. There were certain cases, for example, such as prosthetic treatments of the oral cavity which were interrupted in the final laboratory stages that increased the level of discomfort of patients because of the lack of teeth in the oral cavity. Lack of treatment in such a case can lead to dental migration and bone resorption which make any future prosthetic work difficult. Endodontic treatments, necessary in affections of the pulp, can hardly be delayed because these delays often cause complications of the disease and lead to dental infections and orofacial abscesses which then require specialty treatment and can lead to tooth loss. Periodontal treatments can also lead to tooth loss due to lacking patient monitoring as well as professional treatment offered within a dental surgery. Long-time unsupervised orthodontic treatments in children and young adults can also lead to serious side effects.

Apart from these consequences we also need to take into consideration the socio-economic ones because the appearance of abscesses often leads to patient hospitalization and this, in turn, entails supplemental costs for the public health system and the impossibility of patients to have a normal day-to-day life. (Hoden, A.C. et al., 2020)

Reopening of private dental surgeries and the taken measures

A breath of fresh air in regards to dental medicine and the pandemic's effects on this domain was given through the lifting of the state of emergency on May 15th 2020 and the enforcement of the state of national alert through Government Decision No 24/14.05.2020.

In order to prevent the spread of COVID-19 in what was now a state of inter-community transmission, the measures taken during the state of emergency were maintained but were now applied to all dental offices. These measures

were written into law through the Order of the Ministry of Health No 828/ 15.05.2020, which was then consolidated with Order No 873/2020. (Official Monitor).

Dental medicine is considered to be among the most vulnerable medical specializations, together with ICU medicine, gastroenterology and emergency medicine in regards to infection and transmission of COVID-19, mainly because of the large number of generated aerosols and the fact that a vast number of patients could transmit the disease through the air with their saliva and can be completely asymptomatic, pre-asymptomatic or even mildly symptomatic. Therefore, the imposed measures on this field meant that every possible patient is considered to be a COVID-19 suspect. (Guidice A. et al., 2020)

Certain measures were imposed, such as epidemiological triage done through the telephone, measuring patients' temperature before a consultation, banning access of other people in the waiting room, scheduling of the consultation through telephone or e-mail, the mandatory wearing of mask by the patient in all areas of the dental office until he/she is asked to remove it, proper hand disinfection, equipping the patient with supplemental means of protection such as disposable overalls and shoes etc. In addition to these measures that patients needed to respect we can also mention the measures applicable for doctors, such as rigorous disinfection of all equipment with nebulizers, UV lamps and proper solutions, wearing protective equipment at all times, ventilating the dental office as often as possible, using dental dams as isolating systems, banning sonic and ultrasonic tartar removers as well as recommendations concerning the use of hand instruments, high-volume aspiration instruments and surgical type instruments.

Other measures imposed by this Order were the limitation of radiographic procedures to OPG radiographs or CT scans as well as special entrance-exit corridors for patients and medical or auxiliary personnel. (Order of Ministry of Health No 828/2020)

Limiting the number of patients and procedures

Over time, several studies have shown that undertaking manoeuvres that generate aerosols leads to viral or bacterial particles being present in the air for at least 30 minutes within dental offices. (Bennett et al., 2020) Although studies about COVID-19 are not well cemented now in this regard it seems like the virus can remain active on surfaces between 72 hours and 7 days. That is why, in order to limit the transmission of the virus, rigorous disinfection of all

working surfaces and the aero microflora is recommended for at least 30 minutes, which will, in turn, push back patient scheduling by at least 30 minutes between each other. (Volgenant et al., 2020)

To be able to respect these measures, doctors are always mandated to schedule patients because, within a normal working day, a doctor cannot see more than 5-10 patients, according to their own schedule. This fact, corroborated with the restriction in undertaking certain dental procedures lead to a delay in implementing proper dental treatment in patients and, in turn, to side effects of the already instituted treatment or irreversible complications such as tooth loss.

The importance of protective equipment

Infection control in dentistry has been a much-debated subject over time. Due to the close contact with the patient and the multiple ways in which a virus could be transmitted, be it blood or saliva, dental medicine wishes to calculate risks because of their impossibility to be eliminated. (Volgenant et al., 2018)

Therefore, wearing protective equipment in the current COVID-19 pandemic and for a certain amount of time also afterwards is mandatory and not simply a recommendation. However, the high rate of virulence of this virus has led to the recommendation that the entire medical personnel wear protective equipment (PPE) especially suited for high-risk infection situations, leaving no portion of skin unprotected. Because the way of transmission is centred around the upper respiratory tract, the recommendation of WHO is that special protective masks (type NK95, FFP2, FFP3) be used, with their efficiency being much greater than in the case of a simple surgical mask, especially in the case of medical personnel that are constantly in contact with COVID-19 patients or for dental personnel that execute manoeuvres which generate aerosols. It is, thus, mandatory that during all dental procedures, all personnel present in the dental office wear proper masks. (Long et al., 2020) Studies have also shown that viral transmission can take place through the conjunctival mucosa of the eye, making it mandatory to protect the eyes and the conjunctival mucosa during all dental procedures with protective goggles or visors. (Adhikari et al., 2020) Viral transmission because of contamination of clothing can be avoided through the usage of disposable medical swaps or surgical robes on top of the usual medical equipment. PPE standards must also contain disposable caps for head and hair protection, disposable shoe covers and two pairs of gloves: one to be used during the procedures and another one to be used for removing equipment.

In order to avoid the risk of contamination, it is mandatory that all medical personnel be instructed in regards to the proper way to equip and remove clothing and other equipment because generally, dentists and dental personnel are not used to such PPE standards. The competent authorities in this situation - Ministry of Health, Dental Medical College - should organize such instructing sessions and later check if the measures are being correctly applied.

Because dental medicine entails undertaking manoeuvres in a small cavity with good visibility and because the instruments used are reduced in size and precisely applied, using these PPE standards will make dentists activities more difficult and impact the quality of the medical act. This could lead, in turn, to some of these protective standards and rules being ignored.

Socio-economic and moral aspects regarding private dental medicine

The closure of private dental offices during the state of emergency, the limitation of the procedures, the number of patients and the enforcement of supplemental protective measures through the mandatory acquisition of special, scarcely available, expensive machinery have put a large number of dentists in the situation of not being able to survive financially. This problem has been encountered all over the world, with dentistry being one of the most affected medical specializations from a socio-economic standpoint.

Because over 90% of dental offices are private and are run like a business, many have forgotten the basic principles of morality and ethics and have broken the rules.

International associations such as the American Dental Association have composed ethical codes, the principles contained in them being recommended for all dentists. One of the main current recommendations from the *American Dental Association* was that „this is not the right moment to make a profit".

In a world that is severely affected from an economic standpoint, some doctors have applied a principle of over-taxation and an increase in prices in order to make up for the expenses incurred through the acquisition of specialized protective equipment and machines. This has led to patients skipping certain oral rehabilitation treatments which would have helped them in the long term and a focus from most patients towards immediate emergencies in cases of pain. Other doctors, while trying to keep costs low, have bought poor quality equipment opting to re-use them several times after undergoing a process of disinfection although they were always intended for single use. Along the same line, some doctors insisted on scheduling more patients than their schedules

could bare through a reduction in disinfection times which were considered to be too long, while others have chosen to use ultrasonic or rotary instruments in order to save time.

All these deviations from the rules have a boomerang effect because, alongside the serious risk posed towards infecting patients there is also a significant risk of the doctors infecting themselves, along with the medical personnel, with possibly serious repercussions on their level of health and finances because of the suspension of all medical activities for a period of minimum two weeks. Patients could then choose to never return and ask for their medical services, leading to a financial deficit that is perhaps greater than what supplemental protective items and machines would have cost.

Conclusions

Dental medicine, especially within the private sector, needs to adapt to current conditions caused by the COVID-19 pandemic and undergo a serious risk-benefit analysis. Deciding factors, both political and professional associations should elaborate clear legislation and practical guides which can be used by dentists. Professional associations could also organize training courses for the proper use of supplemental protective gear and machinery as well as inform medics about everything related to the COVID-19 infection.

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