

Emerging Hardships and Future Challenges for the Dental Community Amid the Covid-19 Pandemic

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Abstract

Objectives: To evaluate the emerging hardships and future challenges for the dental community amid the Covid-19 pandemic.

Study Design: Descriptive cross-sectional study.

Place and Duration: This online survey addressed the emerging hardships and challenges of the COVID-19 pandemic on dental community and dental practices in Karachi. The study was carried from Mid-October 2020 till the Mid of November 2020.

Materials and Methods: A total of 100 dental professionals have participated in this study. A sample of 100 participants were selected by random sampling technique. A total of 100 forms were taken into consideration for this survey, but due to the restrictions of COVID-19, this was posted as an online form in various dental related forums. Participants were asked their age, gender and qualification and was recorded in the questionnaire along with the questions regarding covid-19.

Results: According to the results attained out of the 100 participants, 36% were males and 64% females. 58% of dentists had their own private practice while only 34% were working in various public institutes. 94% of them were seen to be general dentists, with only 6% having specialized in a particular field. To minimize the risk of contracting the virus, 76% of the practices were working at minimum capacity. 86% of the practices were suffering economically due to decrease in patient flow, nevertheless, 72% of the participants still remained adamant on the fact that dentistry as a profession still has a viable future even if these circumstances remain.

Conclusion: Dental professionals are at a very high risk of getting exposed to the coronavirus from an asymptomatic patient. The finding of this study concluded that dental offices are among the highest risk for transmission of the COVID-19, having the potential to transmit the virus via routine dental procedures. Dental professionals should constantly update their knowledge and be aware of any impending infectious threats posed by such infectious diseases.

Keywords: Coronavirus; Novel Coronavirus; Covid-19; Hardships; Challenges

Introduction

Coronaviruses are single stranded RNA viruses which are transmitted by the respiratory aerosol [1]. A deadly and contagious virus emerged in China, Wuhan city, Hubei Province in 2019 which has affected millions of people globally [2]. This virus is known as Covid-19. COVID-19 is the shortened form of "coronavirus disease 2019". This new virus has been reported to be contagious and has spread globally at a faster rate. The virus spreads between people but it has been estimated that one infected person will infect two and three or maybe more [3]. The virus is transmitted via respiratory droplets and can also survive for several hours. Virus can cause fever, cough, and shortness of breath, sluggishness and flu like symptoms. Covid-19 can be spread by coughing sneezing, close contact with the infected individual or contact with an object [4]. People with underlying illness, elderly and immunocompromised are more prone to develop

severe symptoms [5]. At the moment the only strategy to prevent the disease is social distancing, self-isolation, avoid touching the face, washing hands with soap and water frequently, using a facemask and avoiding contact with people having flu like symptoms. Realizing the severity of outcomes associated with this disease and its high rate of transmission, dentists were instructed by regulatory authorities, such as the American Dental Association, to stop providing treatment to dental patients except those who have emergency complaints. This was mainly for protection of dental healthcare personnel, their families, contacts, and their patients from the transmission of virus, and also to preserve the much-needed supplies of personal protective equipment (PPE) [6]. Due to the characteristics of dental settings, the risk of cross infection may be high between dental practitioners and patients. For dental practices and hospitals in countries/regions that are (potentially) affected with COVID-19, strict and effective infection control protocols are urgently needed [7]. Dentists should also be updated on how this pandemic is related to their profession in order to be well oriented and prepared. This overview will address several issues concerned with the COVID-19 pandemic that directly relate to dental practice in terms of prevention, treatment, and emerging hardships for dental community.

Methodology

This survey is based on a cross-sectional study that is carried out in difficult time of pandemic and was carried out from Mid-October 2020 to Mid of November 2020 for determining the precautionary methods being carried out by dental community for preventing the spread of the disease cause by Coronavirus-19 (SARS-CoV2), emerging hardships for dentists and the knowledge of this disease. Data was collected using a structured questionnaire and analyzed by using SPSS version 20. Participants gave consent and were also informed that their participation in the study will be anonymous, voluntary and non-compulsory. A total of 100 forms were taken into consideration for this survey, but due to the restrictions of COVID-19, this was posted as an online form in various dental related forums. This online survey addressed the emerging hardships and challenges of the COVID-19 pandemic on dental practices in Karachi. The questionnaire comprised of 26 questions. Questionnaire was divided into two parts. First half consisted of participant's demographic details: age, gender, qualification and working setup and the second half was related to Coronavirus-19, its awareness and preventive measures and challenges for dental community.

Results

A total of 100 forms were taken into consideration for this survey, but due to the restrictions of COVID-19, this was posted as an online form in various dental related forums.

Out of the participants, 36% were males and 64% females. Majority of the participants were observed to be fairly young, more specifically 96% varying between 20 - 30 years. 58% of dentists had their own private practice while only 34% were working in various public institutes. Since our form was filled mostly by fairly young dentists, 94% of them were seen to be general dentists, with only 6% having specialized in a particular field.

When asked, 78% of the participants had not yet been tested for SARS-CoV-2, as 96% of them, at that particular moment, had no signs or symptoms of the virus. Majority of the practices were still open, with 56% still being open for walk-in patients and 30% on appointment bases. 92% of the participants claimed to have adopted different protocols while treating patients during the pandemic. In case of dealing with a potential SARS-CoV-2 positive patient, 48% were still willing to treat the said patient with precautions, while 30% downright refused to. Before any patient entered the clinic, 88% of the practices were taking temperature checks to ensure the patient was healthy. Among the signs and symptoms most commonly checked to evaluate whether a patient was free of the disease, the most common were temperature, cough and difficulty breathing, comprising 84%. When asked which mode of transmission they feared the most while treating a patient, 48% said it was the aerosol produced by high-speed handpieces, while 38% claimed it was the direct exposure to the patient's oral cavity. 86% of the practices were suffering economically due to decrease in patient flow, nevertheless, 72% of the participants still remained adamant on the fact that dentistry as a profession still has a viable future even if these circumstances remain. 100%

of the participants had invested in various barrier protective equipment, because of which 66% were facing an increased financial burden. To minimize the risk of contracting the virus, 76% of the practices were working at minimum capacity. 88% of the participants had taken some course to educate themselves on the nature of the virus and how to keep themselves safe and healthy.

DEMOGRAPHIC DETAILS (FREQUENCY n=100)

Variables	Percentage
GENDER	
Male	36%
Female	64%
AGE	
20-30	86%
30-40	12%
40-50	2%
SECTOR	
Private	58%
Public	34%
Both	8%
QUALIFICATION	
General	94%
Specialist	6%

Figure 1

SURVERY QUESTIONS

Are your clinics open for 'walk-in' patients?	
Yes	56%
No	30%
Which mode of transmission is your biggest concern when treating a patient?	
Aerosol from high-speed hand piece	48%
Direct exposure	38%
All of the above	14%
Have you faced a decrease in patient flow during the pandemic?	
Yes	86%
No	14%
Have you been burdened by the increased cost of handling a clinic during this pandemic to keep with SOPs?	
Yes	66%
No	6%
Somewhat	26%
Do you believe dentistry has a viable future in terms of a full time profession, if these circumstances remain?	
Yes	72%
No	20%
Maybe	8%
To minimize the risk of cross-infection, have you minimized the working staff to bare minimum?	
Yes, we are working at minimum capacity	76%
No, we are working at normal capacity	24%
Do you ever have second thoughts of going to work and treating patients, out of fear of contracting the virus yourself?	
Yes	32%
No	40%
Sometimes	28%

Figure 2

Discussion

The aim of this study was to assess the impact of the COVID-19 pandemic on the profession of dentistry and the challenges it brought along with it. A total of 100 volunteers participated in the survey, with the majority of them being fairly young, between 20 - 30 years of age and having their own private practice as general dentists. Even though at the time of the survey, most of the participants had not yet contracted the virus, they were still fearful and were taking all the necessary precautions before dealing with patients. Many stressed on the increased financial burden on running a practice during these times, but nevertheless, no one was willing to give up and still claimed that dentistry, as a profession, had a viable future even if these circumstances would remain for the time coming.

In a similar study done in February 2020, it was noted there were 4 types of patients with dental emergencies. This included patients with a known SARS-CoV-2 infection, subjects at potential risk of infection, subjects with an unknown risk of infection and lastly subjects who have healed from SARS-CoV-2. Despite all this, every patient, even if they appeared to be healthy should be considered as a potential source of infection and proper precautions should be followed for each case. The SARS-CoV-2 can persist in aerosol for up to 3 hours and has a relatively long half-life of approximately 1.1 to 1.2 hours. Therefore, following proper precautions, treatment should aim at reducing the production of droplets and aerosols as much as possible. However, if unavoidable in any case, proper ventilation must be ensured [8].

One study done in May 2020, stressed on some points every practice should be taking on dealing with the virus. The entire dental team should update their knowledge regarding infection control and follow all the required protocols. During treatment, the highest level of PPE should be observed including gloves, gown, head cover, shoe cover, eye protection including goggles or a disposable/reusable face shield that covers the front and sides of the face, and a N954 or higher-level respirator. Good hand hygiene was considered to be one of the best ways to prevent the spread of infectious diseases [9].

Another research done in Iran, mentioned that 7% of Iranian dentists had faced SARS-CoV-2 related symptoms, while 1% had tested positive. According to this study, it was noted that there was an increased demand for remote dental consultations, known as tele-dentistry, but many dentists did not believe this to be a very effective way of delivering dental services. Therefore, in future studies, an attempt must be made to hypothesize and design advanced technologies that may be able to virtually deliver dental services. Most practices were at minimum working capacity and were not dealing with any non-emergency procedures [10].

In a similar study done in France, it was noted that even after lockdown was lifted, a decrease in patient flow was observed, going from 15 to 20 patients per day to only 7 or 10 on average. During treatment of only emergency cases, a preprocedural mouth rinse with 0.2% povidone-iodine or 0.5 - 1% hydrogen peroxide mouth rinse was strongly recommended [11].

One research done in May 2020, stated that precautions should be taken not only in the operating room, but also outside it, such as the waiting area. Having fewer patients in the waiting area can reduce the risk of cross infection, as well as provide the dental staff with enough space to disinfect the clinical area as needed. Patients should also be advised to make use of antiseptic gel and avoid the unnecessary touching of surfaces. It was also noted that before dealing with any patients, practices were making use of a questionnaire to detect the presence of any COVID-related symptoms over the phone. This study again, stressed on the use of pre-operative mouthwashes [12].

One study assessed the knowledge and practice of dentists toward SARS-CoV-2. They concluded that the majority of dentists had good knowledge (91.3%). Reason for this may be attributed to the fact that 73.37% of dentists used official government websites such as the World Health Organization as the main source of information about SARS-CoV-2. It was also observed that the specialist dentists reported better practice compared to the general practitioner. This may be associated with better qualifications. Moreover, majority of dentists were afraid to get infected from patients (86.3%). The fear of treating SARS-CoV-2 patients was noted to be associated with poor practice. Therefore, psychological interventions to improve dentist's mental health and to enhance their confidence in treating patients during the COVID-19 pandemic is very important and should not be ignored [13].

A similar research done in April 2020 talked about the best approach taken in a suspected or confirmed case of COVID-19, requiring urgent care. In these cases, it may be better to take a pharmaceutical approach, to provide urgent relief, or refer the patient to a specialist or if absolute best necessary, treat the patient in a hospital setting with the necessary precautions to minimize the spread of infection [14].

According to our study, 78% of the participants had not yet tested positive for COVID-19, which is clear evidence of the fact that majority of the dentists are following the required SOPs. 57% of the practices were still open for walk in patients, which in some cases was necessary, as most of the participants claimed dentistry as their only source of income. Even though the majority of participants were fearful of going every day, close to a half of them had no problem in dealing with a suspected case, which shows that they were willing to give more importance to their ethical values rather than their lives. Nevertheless, it is essential that the psychological and mental well-being of dentists be given priority as well.

Conclusion

Coronavirus pandemic has challenged every profession of the society to mend their ways of functioning but in particular healthcare profession. Dental professionals have to deal with the symptomatic patients to provide emergency care or asymptomatic patients for routine care. This is a time of uncertainty and a great deal of anxiety. Lack of guidance at local, regional, and national levels can create a dangerous situation in which dentists can spread the transmission of COVID-19 to the population. Through keeping up with current international recommendations, we can respond to the urgent oral and dental needs of our patients, keeping ourselves, our families, and our communities healthy and safe. This unfortunate pandemic event can act as a wake-up call for our dental profession. Dental professionals should constantly update their knowledge and be aware of any impending infectious threats posed by such infectious diseases.

Conflicts of Interests

The authors declare that they have no conflicts of interest in relation to the publication of this article.

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Role and Contribution of Authors

Dr. Sheikh Haroon Shah, Supervisor, critically review the article and made final changes.

Dr. Abdul Ahad Jamshed, collected the data and references and helped in interpretation of data, article writing.

Dr. Ahmed Tariq, collected the data, references and wrote the introduction writing.

Dr. Rehan Ahmad, collected the references and helped in article writing.

Dr Sabeen Masood, Article writing, Collection of references.

Dr Adil Ali Aziz, Data Collection.

Bibliography

1. Rota P A. "Characterization of a Novel Coronavirus Associated with Severe Acute Respiratory Syndrome". *Science* 300.5624 (2003): 1394-1399.
2. Singhal T. "A Review of Coronavirus Disease-2019 (COVID-19)". *Indian Journal of Pediatrics* 87.4 (2020): 281-286.

3. Lu H. "Drug treatment options for the 2019-new coronavirus (2019 nCoV)". *Bio Science Trends* (2020).
4. Singhal T. "A Review of Coronavirus Disease-2019 (COVID-19)". *Indian Journal of Pediatrics* 87.4 (2020): 281-286.
5. Antonio R and Silvia M. "Immunosuppression drug-related and clinical manifestation of Coronavirus disease 2019: a therapeutical hypothesis". *American Journal of Transplantation* 20 (2020): 1947-1948.
6. Odeh ND., *et al.* "COVID-19: Present and Future Challenges for Dental Practice". *International Journal of Environmental Research and Public Health* 17.9 (2020): 3151.
7. Meng L., *et al.* "Coronavirus Disease 2019 (COVID-19): Emerging and Future Challenges for Dental and Oral Medicine". *Journal of Dental Research* 99.5 (2020): 481-487.
8. Izzetti R., *et al.* "COVID-19 Transmission in Dental Practice: Brief Review of Preventive Measures in Italy". *Journal of Dental Research* 99.9 (2020): 1030-1038.
9. Bhanushali P., *et al.* "COVID-19: Changing Trends and Its Impact on Future of Dentistry". *International Journal of Dentistry* (2020): 1-6.
10. Hanie Ahmadi., *et al.* "The Impact of COVID-19 Pandemic on Dental Practice in Iran: A questionnaire-based report (2020).
11. Gaudin A., *et al.* "Effect of COVID-19 on Dental Education and Practice in France". *Frontiers in Dental Medicine* (2020): 1.
12. Passarelli PC., *et al.* "The impact of the COVID-19 infection in dentistry". *Experimental Biology and Medicine* 245.11 (2020): 940-944.
13. Nasser Z., *et al.* "Assessment of knowledge and practice of dentists towards Coronavirus Disease (COVID-19): a cross-sectional survey from Lebanon". *BMC Oral Health* 20 (2020): 281.
14. Amber Ather., *et al.* "Hargreaves. Coronavirus Disease 19 (COVID-19): Implications for Clinical Dental Care". *Journal of Endodontics* 46.5 (2020): 584-595.

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