

Impact of COVID-19 Quarantine on Utilization of Dental Treatment

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ABSTRACT

Background: Coronaviruses diseases-19 (COVID-19) has become pandemic throughout the world, which is highly transmissible. Because of close physical contact with patients, dental professionals are at particularly high risk of being infected with COVID-19. As a result, the dental services were limited to the emergency and urgent cases during the early days of the pandemic.

Aim: The aim of the study is to assess the impact of COVID-19 quarantine on utilization of dental treatment.

Methodology: A cross-sectional study was conducted among the outpatients within the age-group of 16–65 years in Kancheepuram and Chengalpattu districts. Patients who were undergoing dental treatment before lockdown and those who experienced emergency problems during COVID-19 pandemic were included in this study. A questionnaire with 24 questions assessing the level of anxiety and their concern about the impact of quarantine on dental care was obtained.

Results: The results revealed that during quarantine 33.5% of people suffered from pain and 30% experienced sensitivity. On attending dental appointment, 43% of patients were concerned about the risk of contaminating their family, 30% are not concerned about COVID-19.

Conclusion: Ongoing dental treatment and dental emergencies were major factors leading patients to be more willing to attend dental appointments during quarantine. Dental procedures involving aerosols should be avoided during COVID-19; in addition, some precautionary measures should be implemented during this period.

Keywords: COVID 19 pandemic, Dental appointment, Dental emergencies, Quarantine.

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INTRODUCTION

COVID-19, first diagnosed in China in 2019, has become pandemic throughout the world in a short period of time.¹ A public health emergency intimidated the world in 2019, soon with a pandemic announced by the WHO with the emergence of Coronaviruses.² Coronaviruses are a group of viruses belonging to the family of Coronaviridae, and SARS-CoV-2 viral genome is a part of betacoronavirus.³ Coronaviruses are spherical in structure and have spiked glycoprotein on their surface, which makes them appear like a crown, the reason for their name corona. Various studies have been reported that human coronaviruses can remain viable on various inanimate surfaces from 2 hours to up to 9 days.⁴

SARS-CoV-2 is highly transmissible; the incubation period can range from 0 to 24 days; therefore, transmission can occur before any symptoms are apparent.⁵ Many considerations regarding possible hazardous activities or workplaces have been raised based on both our experience from previous SARS-CoV infections and our observation of the transmission pattern of the SARS-CoV-2.^{6,7}

The signs and symptoms were initially asymptomatic, mild, moderate, severe, and critical.^{8,9} Most patients show symptoms like dry cough, which is usually accompanied by fever, respiratory distress, rapid fatigue, and other less common symptoms like the reduced sense of smell (hyposmia) and abnormal taste sensation (dysgeusia).¹⁰ Infected children have relatively milder clinical symptoms than infected adults.¹¹ As children may be asymptomatic or have mild, nonspecific symptoms, all patients and parents of children should be considered potential carriers of COVID-19.¹²

The dental practice is the focus of nosocomial infection, and care must be taken to minimize the risk of infection between dentists

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and patients.¹³ Based on the dental procedures, and the proximity of the dental team with patients, the disease could readily spread from infected patients to the dental team, and vice versa, and subsequently to other patients, if appropriate protective infection control measurements are not undertaken.¹⁴

Because of close physical contact with patients, dental professionals are at particularly high risk of being infected with COVID-19, as well as transmitting COVID-19 to their patients.¹⁵ The virus could spread via respiratory droplets and contaminated surfaces through the mucous membrane of the mouth, eyes, and nose, and even via the feco-oral route.^{16,17} This highly contagious nature of the virus has made many dental institutions to cancel all elective procedures to reduce the risk of contagion. The use of handpieces and ultrasonic instruments during dental procedures results in the generation of blood and saliva droplets.¹⁸ Consequently, these droplets could contaminate the dental instruments and the office environment. Hence, both dental

practitioners and patients could be at risk of being infected with microbial pathogens.^{19,20}

For instance, the dentists and their assistants should regularly provide preprocedural mouthrinse for the patients, and frequently disinfect the dental instruments.²¹ In addition, to reduce the risk of transmission of high-volume saliva ejectors, antiretraction handpieces, the rubber dam isolation, and personal protective equipment (PPE) should be used.²² Because of the high risk, it's recommended that dental professionals postpone elective procedures and provide only emergency dental care.¹⁵ The closure of dental clinics because of the COVID-19 pandemic has disrupted dental services to the patients.²³ As a result, the dental services were limited to the emergency and urgent cases during the early days of the pandemic.²⁴

It is well known that developing an effective vaccine that implements widespread immunization takes time. The long-term consequences of this pandemic are currently unknown, but they will undoubtedly result in a "new normal" for the provision of dental care.²⁵

Managing the balance between patient concerns and safety related to COVID-19 transmission and upholding long-standing practices of regular visits for prevention and treatment presents a new challenge to dental health. Little is known about the beliefs, attitudes, and perceptions that dental patients have regarding susceptibility to being infected with COVID-19 as a result of professional dental care during this pandemic.¹⁵ Amid this situation, patients remain uncertain about whether to attend their dental appointment or not, little is known about the level of anxiety experienced by patients regarding the continuity or interruption of dental treatment and the resulting impact as we are facing a new situation not experienced previously by any of us.²⁶

It is the dental practitioner's moral and ethical responsibility to balance patients' needs and public health concerns.²⁷

The aim of our study was to access the impact of COVID-19 quarantine on utilization of dental care and patients concerns on the treatment aspects. This study will serve to guide dental and public health professionals and patients as they seek to re-establish positive dental health care practices in the midst of the COVID-19 pandemic.

METHODOLOGY

A cross-sectional study with simple random sampling was conducted among the out patients within the age-group of 16-65 years from five dental hospitals in Kancheepuram and Chengalpattu districts.

Prior to the start of the study, ethical approval has been obtained from the institutional scientific review committee, Asan Memorial Dental College and Hospital, Chengalpattu.

Sample size for the present study was estimated to be 200 using $z \alpha^2 pq/l^2$, where prevalence rate is 66% in reference with the Renan et al. study.²⁶

Patients who are willing to participate in the study are included in the study.

A self-administered closed-ended questionnaire with 24 questions consisting of the following: age, gender, location, type of dental care done during quarantine, any case of emergencies, the biosafety routine of dental setups, patient's willingness toward their self and child's dental treatment during COVID-19, attitude toward investigatory procedures. The level of anxiety about the corona virus pandemic and their impact on dental

treatment were evaluated by a scale consisting of Calm, Anxious, Fear, Panic, Indifferent, and their levels of concern about the impact of quarantine on dental care and patient's oral health conditions, use of homecare remedies, and economic levels on dental treatments.

The responses were collected from December 17, 2020 to January 18, 2021 through direct interaction and it was translated to regional language "Tamil" for easy understanding by the participants. Responses were also collected via phone calls from those participants with whom direct interaction was not possible.

Statistical analysis and descriptive statistics were carried out with SPSS software version 25.

RESULTS

Two hundred patients answered the questionnaire. Among them, 51% were male and 49% were females with a mean age of 21–30 years. With respect to the quarantine, 44.5% were leaving home as little as necessary, 30.5% said they were not leaving home at all, 18.5% were going out normally and only 6.5% of them were not in the favor of quarantine. About 39.5% of them were going out to work or study, 37% of them were working or studying from home, and 23.5% of them do not work or study.

During quarantine, 33.5% of people suffered from pain, 30% experienced sensitivity, 25.5% was having halitosis, 7.5% of people had swelling, and 3.5% experienced trauma.

In patients who were undergoing dental treatments before quarantine, 31% of the patients were not concerned about the treatment whereas 26% of the patients say that there will be a delay in dental treatment, 24% were worrying about worsening of the condition, 13% were anxious about the final result of treatment, and 6.5% were afraid of losing their investment.

On attending a dental appointment, 43% of patients were concerned about risk of contaminating their family, 30% are not concerned, 15.5% feel that dental offices represent high risk of COVID-19 infection and 11.5% of people think that their treatment is not urgent.

About 55% of patients think that the dental environment can infect the children, whereas 23% were ready to do dental treatments for their children during quarantine.

To attempt an online dental consultation, 84.5% of them were not ready and only 15.5% of patients tried for online dental consultation. This reveals that there was no statistical significance regarding age and online dental consultation with p value = 0.797 and there is statistical significance in comparison with gender and online dental consultation with p value = 0.016.

Considering the anxiety levels of the patients about the COVID-19 pandemic, 33% were anxious, 28.5% were calm, 21.5% were in fear, 8.5% were in panic, and 8.5% of them were indifferent during quarantine. This shows that there was no statistical significance between the anxiety level and the willingness to attend a scheduled dental appointment during quarantine with p value = 0.140, and it also reveals that there was no statistical significance between the anxiety level and the willingness to take dental radiographs during quarantine with p value = 0.187.

On the basis of patient's treatment preference, 59.5% opted for multiple-sitting root canal treatment (RCT) whereas 40.5% chose single-sitting extraction, and there was statistical significance between age and treatment preference with p value = 0.005, and there is no statistical significance in comparison with gender and treatment preferences with p value = 0.214.

In patient's knowledge, the most effective COVID-19 screening methods are the following: 50.5% patient tells body temperature screening is effective, 31.5% go for rapid testing, 6% opt for using pulse oximetry, and 12% has no idea on screening methods.

Considering the patients view on preventive measures in dental office during COVID-19, most patients (52%) said that all like hand sanitizers, N95 surgical masks, PPEs, social distancing in dental office, and disposable lab coats are necessary, whereas 23.5% chose mask alone is effective.

DISCUSSION

The outbreak of COVID-19 has shown a drastic effect on one's social life, because all mass gatherings and social events are being avoided to reduce the transmission rates. Apart from other preventive measures, significant differences are noticed between the continents regarding the number of people avoiding social gatherings.²⁸ Some impacts like stress that can lead to depression due to social distancing and isolation are related to increased vulnerability of mental health.²⁴

The study was conducted in December 2020, as the quarantine was active for the past 8 months, in the state of Tamil Nadu, India. Following the WHO recommendations, dental treatments were restricted to conduct only in emergency situations,²⁶ and many dental setups were closed due to which patients who were on dental treatments before quarantine and those who experienced new dental problems during quarantine were affected.

The primary intention of the survey was to evaluate the impact of COVID-19 quarantine on utilization of dental treatment providing insights about the level of anxiety, awareness, perception, attitudes, expectations of patients in response to COVID-19 pandemic. The purpose of the study was not to discuss the effectiveness of quarantine.²⁶

Studies like this are useful because they raise clinically important information and more nuanced understanding regarding the present situation, helping the clinicians to provide besides the needed dental care, also necessary hosting and attention.²⁹

An increasingly perceived problem encountered by the dental practitioner, in his practice, is the anxiety of the patient population regarding the dental procedure. Dental treatment remains as one of the most anxious visits despite awareness among both the dentists and the patient in building trusting relationships.³⁰

Of all the patients who answered the questionnaire, 33% were anxious to receive dental treatment and 43% were in fear. This study is comparable to the previous study done by Peluso et al.²⁶ showing correlating results. This may be due to the availability of media reports from all around the world by means of internet and mass media regarding the COVID-19.²⁶

About 87% of the people who attended the survey were ready to attend the appointment during quarantine which was similar to study by Peluso et al.,²⁶ which indicates that patients in the middle of the treatment showed greater care and attention regarding their treatment and probably would not miss an appointment to avoid impairing the outcome of their treatment.²⁶

During this study, we came across the emergencies faced by patients during the COVID-19 pandemic. About 33.5% of them faced dental pain due to pulpitis and apical periodontitis and 7.5% experienced swelling, 3.5% faced trauma, which is comparable to study done by Guo et al.,²⁴ according the author dental pulp and periapical lesions were main reason for dental emergency visits followed by abscess and trauma.²⁴

Though tele dentistry was considered as option during quarantine period but was not as effective as expected. About 15.5% tried online dental counseling during COVID-19 pandemic, whereas 84.5% did not attend any online dental counseling.

On an account, male actively attending online dental consultation at rate of 21.5% compared with females of 9%. This can be possibly explained by the fact that women were worried about the situation of the COVID-19 pandemic outbreak and concerned about other problems like social, economic where dental treatments are mostly nonessential and can wait until the situation normalizes.

About 43% of them considered attending dental treatment will not only infect them but may also increase risk of contaminating their family members and 16% of them think dental office represent high risk of COVID-19. Because of introduction of safety protocols such as PPE kits, N95 surgical facemasks, hand sanitizers at reception, thermo check, and pulse oximetry, it is possible to begin providing routine dental care to patients without the risk of cross infection. Patient education and assurance are also important along with dental treatment. In this survey, 52% of them consider all the precautions are important in actual stage of pandemic in dental office.

The data of this survey are important to show that the patients are aware and the following available recommendations are important to maintain their confidence in health care professionals and their compliance with dental treatment during COVID-19 pandemic.²⁶

The limitation of this survey is a lengthy questionnaire consisting of 24 questions, which took a long time for patients to answer these questions. Some medical terms used in the questionnaire were difficult to understand by the patients and required a counter explanation to answer.

CONCLUSION

The quarantine recommended because the COVID-19 pandemic was shown to have an impact on dental appointments and patient's anxiety. Ongoing dental treatment and dental emergencies were major factors leading patients to be more willing to attend dental appointments during quarantine. Dental procedures involving aerosols should be avoided during COVID-19; in addition, some precautionary measures should be implemented during this period. However, there are situations in which dental appointments is necessary. In these cases, guidelines of WHO should be followed. Though some emergencies in dentistry need face-to-face appointments, in which additional precautionary measures need to be taken.

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