

Average number of patients underwent root canal treatment during COVID time.

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Abstract

Introduction: The advent of the COVID-19 pandemic poses a significant global health risk. As dental care providers, we have major duties to both our dental team and our patients in terms of limiting virus exposure. The crew is at a significant risk of getting the virus and potentially transferring it due to the nature of our work. Enforcing adequate social distancing is one of the most important ways to contain this pandemic. We are faced with the dual problem of safeguarding ourselves and also our patients from community transmission while still ensuring that patients have access to urgent/emergency dental care. This study analyses the average number of patients underwent root canal treatment during the COVID time. **Materials and Methods:** The case sheet records (DIAS data) of patients who underwent Root canal treatment during COVID time were extracted. The data were analysed and transferred to MS Excel. Descriptive statistics and inferential test (Chi square test) were performed. **Results:** Among the total 2330 samples, Majority of the patients (53.5%) underwent Root canal treatment were 20 to 40 years old (1246. Patients). Majority of the root canal treatments (48.6%) were done in Posterior teeth (1867). The Gender ratio of the patients who underwent root canal treatment during COVID time was almost equal. **Conclusion:** In a COVID-19 high-risk location, endodontic emergencies account for a much larger proportion of dental emergencies than they would otherwise. During the COVID-19 outbreak, rubber dams, personal protective equipment, and patient screening all play a key role in keeping physicians safe.

Keywords: COVID, Dental emergencies, Novel method, Root canal treatment.

Introduction

Coronaviruses (CoVs) are zoonotic encapsulated single stranded RNA viruses that induce symptoms which range from the common cold to more severe respiratory, intestinal, hepatic, and neurological problems [1]. There are six known CoVs in humans, in addition to SARSCoV2: HCoV229E, HCoVOC43, SARS CoV, HCoVNL63, HCoVHKU1, and Middle East respiratory disease (MERS) CoV. In the previous two decades, CoVs have generated two large-scale pandemics: SARS and MERS [2]. Because of the nature of the dental environment, the dentist and the dental team, as well as the patient, are at a significant risk of cross infection. The COVID-19 pandemic has necessitated the implementation of strong and effective infection control policies in addition to those already in place in the dentistry context. In the current atmosphere, the goal of this position statement is to establish a Standard Operating Protocol (SOP) for endodontic and dental practise. This publication covers the basics of COVID-19 and nosocomial infection in dental settings, as well as recommended management strategies for both institutional and private dentistry offices.

The three most common transmission routes [3] of novel CoV include:

- ✓ Direct transmission (through cough, sneeze, or droplet inhalation)
- ✓ Contact transmission (through oro-nasal-ocular route) and
- ✓ Aerosol transmission.

Asymptomatic carriers of the infection can transmit the virus just as symptomatic individuals [4]. The SARSCoV2 virus can be identified in aerosols up to 3 hours after surgery and can survive for long periods of time on surfaces. The virus's persistence is affected by the type of the surface. The virus can survive for up to 4 hours on copper surfaces, 24 hours on cardboard, and 2–3 days on plastic and stainless steel [5].

Many countries have encouraged/expected social distance as a primary method for slowing the transmission of infection and “flattening the curve” of affected people over time. The CDC in the United States is regularly updating other methods taken to decrease the doubling time and rate of infection, in

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addition to social distance. This reduces the risk of others contracting the disease from an infectious individual. For example, a recent analysis based on available data predicted that in the absence of social distancing, 260,000 people in the United Kingdom would die. In fact, for people above the age of 70, this paradigm prescribes not only social isolation but also self-isolation.

Social isolation, on the other hand, makes it difficult to provide dental care. Endodontists, in particular, are dental practitioners who play a key role in the treatment of dental emergencies such as symptomatic pulpitis, acute dental infections, and dental traumatic injuries. As a result, total shutdown of clinical practices/dental institutes is not advised. Dentists can also help with health education by disseminating information on preventive measures offered by their respective national governments and referring suspicious COVID19 patients to government-approved facilities. Our team has extensive knowledge and research experience that has translated into high quality publications [6-25].

This study analyses the average number of patients underwent root canal treatment during the COVID time.

Materials and Methods

The DIAS (Dental Information’s Archiving Software) data of patients who underwent root canal treatment during COVID time were collected by simple random sampling method. Cross verification of data was done. Incomplete and censored data were excluded. The analysis was done using SPSS version 19. Descriptive statistics were used to correlate between the

age, Gender and anterior & posterior teeth. The data after importing to SPSS was performed with a Chi- square test. The type of analysis performed was correlation and association. The level of significance was set at 0.05.

Results

Among the total of 2330 patients, 8.2% were >20 years, 53.5% were 20 to 40 years old, 33.1% were 40 to 60 years old and 5.3% were <60 years old (Figure 1). Among the patients who underwent Root canal treatment, 51.4% were Male and 48.6% were Female (Figure 2). 20% of the root canal treatments were done in anterior teeth and 80% of the root canal treatments were done in Posterior teeth (Figure 3). Among the total samples, the majority of the root canals treatments were done to the patients of age between 20 to 40 years and Posterior teeth root canal treatment was the majority. The Gender ratio of the patients who underwent root canal treatment during COVID time was almost equal.

Discussion

Exceptional problems demand unprecedented solutions. Our major purpose as dental health care providers is to assist our patients in their time of need. However, the present pandemic has turned dentistry into a powerful disease-transmission vector in society. As a result, the current situation necessitates revised policy guidelines that clarify the scope of dental services that we can safely perform. This joint position statement from the IES, IFEA, and IDA is an attempt to provide a logical and effective clinical decision-making process that enables us to effectively screen, protect, and serve our patients.

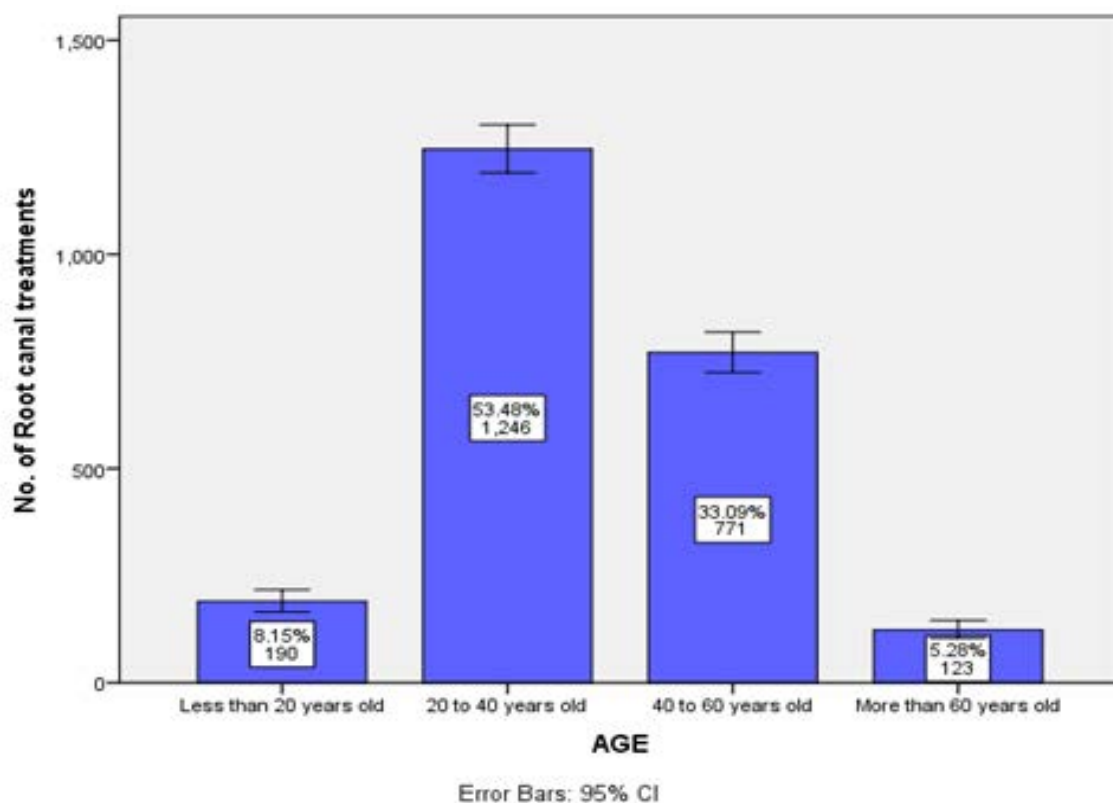


Figure 1. Frequency graph of age of the patients.

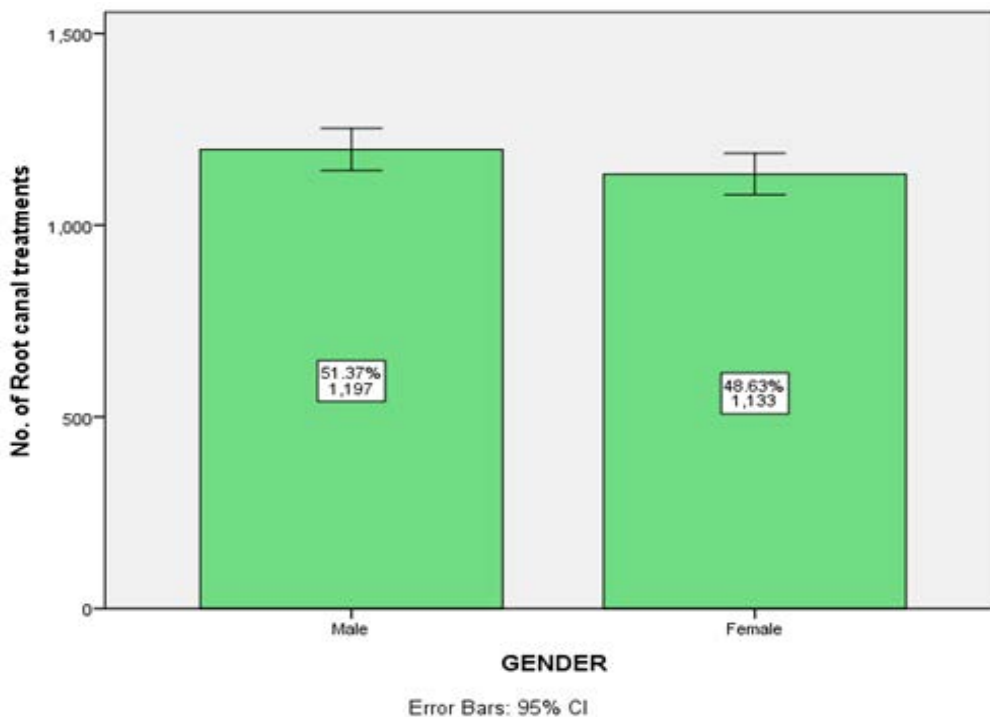


Figure 2. Frequency graph of gender of the patients.

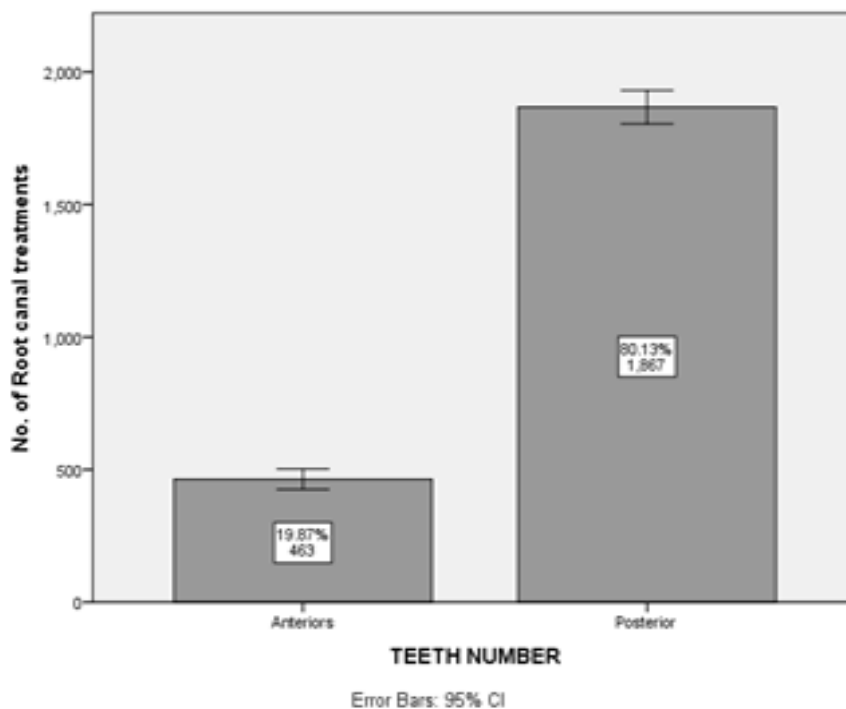


Figure 3. Frequency graph of teeth number of the root canal treated teeth.

In this study, the male-to-female ratio for endodontic emergency patients (1.1:1) and total dental emergency patients (1.2:1) was practically the same (Figure 4), in contrast to other studies [26-30] that found a higher percentage of male patients presenting with dental emergencies. However, this disparity could be due to our patient population's larger proportion of endodontic emergency patients. In our study, the most common age group for endodontic crises was 20 to 40 years old (Figure

5). Importantly, COVID-19 prognosis is worsened with increasing age and the presence of underlying comorbidities [31-33]. Because patients older than 60 years represented approximately 5.3% of all patients, care should be exercised to avoid cross contamination. COVID-19 is now diagnosed using a mix of epidemiologic data, clinical symptoms; chest computed tomographic imaging findings, and laboratory investigations, such as RT-PCR on respiratory tract materials [31]. Sabino-Silva et al. [34] have highlighted

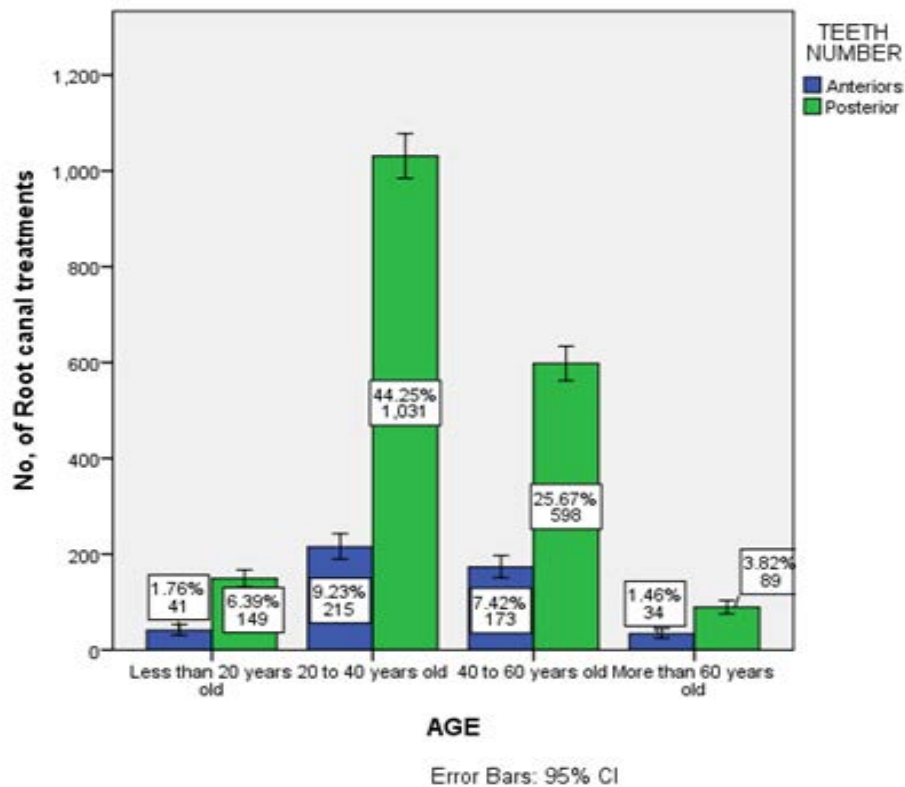


Figure 4. Comparison graph of age of the patients and the teeth number of root canal treated teeth.

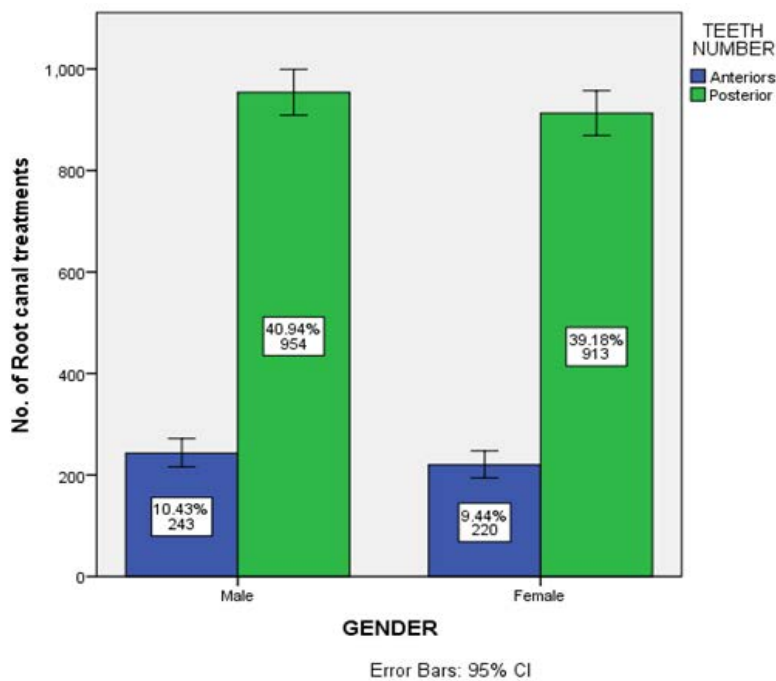


Figure 5. Comparison graph of gender of the patients and the teeth number of root canal treated teeth.

serious concerns about the function of saliva in disease transmission between humans, particularly respiratory coronaviruses [35,36].

Endodontists should take appropriate measures to stay safe. The most prevalent endodontic emergency was symptomatic irreversible pulpitis. During the COVID-19 outbreak, treating endodontic emergencies was difficult because inhaling airborne particles and aerosols produced during dental operations

on COVID-19 patients might possibly expose dentists to the virus [34], making them high-risk procedures. Reduced treatment time and exposure management are two approaches to lower the risk of infection during endodontic therapy. In cases of pulpitis, vital pulp therapy, such as pulpotomy or pulp capping, may be beneficial in terms of reducing treatment time. One day following therapy, pulpotomy has been shown to alleviate pain sensations in approximately 90% of dental

emergency patients [37]. Partial pulpotomy with Mineral Trioxide Aggregate (MTA) had a good success rate (85%) over 3-year follow-ups in mature permanent teeth clinically diagnosed with irreversible pulpitis [38], and full pulpotomy with MTA had a 92.7% success rate in caries-exposed pulps in mature permanent molar teeth [39]. At 36 months, direct pulp capping with MTA had an 85 percent cumulative survival rate in adult molars with carious pulpal exposure [40]. Cone-beam computed tomographic imaging and single-file systems were also considerably used for root canal treatment. A side from the benefits of detecting root canal placement and configuration [41], cone-beam computed tomographic examination could help patients avoid nausea or vomiting that can occur during intraoral x-ray examinations, as well as avoid exposure to the oral cavity [31]. Single-file nickel-titanium systems could be employed during root canal preparation to save time and avoid the risk of sterilization [42]. Ather et al. [43] advised a number of preventative precautions for any therapy that produces droplets and/or aerosols, including the use of rubber dams. When rubber dams are used, it has been reported that up to 70% of airborne particles can be eliminated. Other than that, Regular UV sterilization of the dental instruments and the working area, Overnight disinfection of the working area and dental chair will and other clinical sterilization protocols are also recommended for the self-protection of Dentist as well as to reduce the contamination and spread.

Conclusion

In a COVID-19 high-risk location, endodontic emergencies account for a substantially larger percentage of dental emergencies than they would otherwise. During endodontic treatment, reducing treatment time and controlling exposure are two approaches to dramatically lower the risk of severe acute respiratory syndrome coronavirus transmission. Rubber dams, personal protective equipment, and patient screening all play a key role in keeping physicians safe. The advantage of vital pulp therapy is that it reduces treatment time. During the COVID-19 outbreak, rubber dams, personal protective equipment, and patient screening are critical in keeping physicians safe.

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Conflict of Interest

The author has no conflict of interest.

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