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**ORIGINAL ARTICLE**

# Comparing the Difference on Inflow of Patients in Oral and Maxillofacial Surgery Department before and During Covid-19

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## ABSTRACT

**Objective:** To Compare the difference on the inflow of patients before and during COVID-19 on the patients presented at oral & maxillofacial surgery at Advance Dental Care Centre, Liaquat University of Medical and Health Sciences

**Materials &Methods:** Medical statistics have been collected for the patients who visited the Advance dental care centre, Liaquat university of medical and health sciences between 1 January 2019 and 31 December 2020. The data collected included age, gender, and extraction of teeth. SPSS version 20.0 was used for the statistical analysis.

**Results:** Of all the patients who visited, 3715 were females and 2571 were males, with a female to male ratio of 1.2:1. The youngest patient was 15 years old, and the oldest was 60 years old. The most common cause among patients in 2019 and 2020 was periodontal problems.

**Conclusion:** The COVID-19 epidemic affected the population, pattern of oral diseases, its services, and the frequency of visits to advance dental care centre the proportions of patients who were adolescents and elderly people increased, meanwhile the percentage of the conservative treatments increased during the outbreak of COVID-19.

**Keywords**: COVID -19, Tooth extraction; Periodontal disease, Prophylactic antibiotics.

## INTRODUCTION

The new coronavirus (SARS-CoV-2) was discovered in China in December 2019. Shortly after, in February 2020, the virus expanded to Europe and than in Asia. On March 11, 2020, the World Health Organization designated the virus as COVID-19 and proclaimed it a pandemic.[1,2] Numerous lives have been impacted, including those of persons from all socioeconomic origins, cultural origins, and profession backgrounds, but notably those of all healthcare practitioners who are on the first lines of the disease's fight.[3,4]

Air and direct touch are the two major methods of Sars-CoV-2 infection.[5] Direct-contact infections happen when a person comes into proximity with infected surfaces and then touches their eyes, nose, or mouth thereafter. Airborne infections happen via droplets emitted by coughs, sneezing, exhaling, or speaking.[6,7] Additionally essential to the propagation of infection is saliva.[8]

Healthcare professionals are more susceptible to being infected and spreading the illness due to the broad transmission of SARS-CoV-2. Dental health care professionals (DHCP) are classified as having a very high exposure risk by the Occupational Safety and Health Administration (OSHA) because to their near closeness to patients' mouth cavities.[9] Due to the high risk of infection for both dental office personnel and patients, numerous procedures and practises were put in place to reduce this risk, such as the usages of personal protective equipment, body temperature monitoring, epidemiological interviews, air disinfection, extending the time between patients, and rotating the tasks of dental offices.[9,10]

In accordance with the three-step protection strategy advised by the WHO, dental practitioners should adhere to the sanitary and epidemiological regulations set out by their nation.[9] Patient triage, prescribing mouth rinses before dental treatment, handwashing for patients and dentists, personal protective equipment for dental professionals, limiting aerosol-producing techniques, and sanitising of potentially contaminated surfaces are thought to be the most crucial protective and contamination-reduction measures.

There is certainly a decrease in overall elective procedures of dental treatment and there is also impact of COVID-19 on patient's visits to dental surgeons, so our aim for this study is to compare the impact of COVID-19 on the inflow of dental patients.

## MATERIALS AND METHODS

**Study Design, Settings & Duration**: This retrospective cross-sectional study was carried on in Department of Oral & Maxillofacial surgery department in ADCC, LUMHS, Hospital, Hyderabad, Pakistan from 01 Jan 2019 to 31 Dec 2020. Approval of the project was sought from Ethical Review Committee of the Liaquat university of medical and health sciences Hospital. The data was taken from medical record available in Advanced dental care center Hyderabad from 1st January 2019 and 31st December 2020.The demographic variables were age and gender , while other variable was cause of the extraction of teeth. SPSS 20.0 were used to analysed data.

**Data Collection Plan:** Grouping / independent variables were sex (men/ women) and age groups (15-20,20-35,35-50,>50years) while research/ dependent variable was extraction of teeth and etiology. The data type was nominal for all the variables.

**DATA ANALYSIS PLAN**

**Descriptive Statistics and Estimation of Parameters:** By count and percentage, the three variables for the sample were examined. The Wilson score interval for the binomial distribution was used to examine the estimated parameters for these three variables for the population as a C.I (confidence interval) for percentage at 95% C.L (confidence level).

## RESULTS

A total of 6286 patients visited the Department of advance dental care Liaquat University of Medical and Health Sciences from 2019 to 2020. Of all the patients who visited, 3715 were females and 2571 were males, with a female to male ratio of 1.2:1. The youngest patient was 15 years old, and the oldest was 60 years old. There were 4146 and 2140 patients who visited in 2019 and 2020 respectively. Difference in patients visit in both years was statistically significant. The frequent reason of patients visit in 2019 and 2020 were periodontal problems and least common were due to orthodontics reasons. Other reasons were prosthetic reasons, non-restorable teeth. The most common problems were periodontal problems 38.5% (1600/4146) in 2019 and 42% (900/2140) in 2020, ($P < 0.001$)

Table 1: Descriptive Statistics of Age and Gender

| Variable | 2019 (n=4146) | 2020 (n=2140) |
|---|---|---|
| Age<br>15-20yrs<br>20-35yrs<br>35-50yrs<br>>50yrs | <br>250(6%)<br>1256(30.3%)<br>1460(35.2%)<br>1180(28.5%) | <br>186(8.6%)<br>691(32.3%)<br>763(35.7%)<br>500(23.4%) |
| Total | 4146 | 2140 |

| | (100%) | (100%) |
|---|---|---|
| Gender<br>Male<br>Female | 1654 (40%)<br>2492 (60%) | 917(43%)<br>1223 (57.1%) |

Table 2: Tooth Extraction on the Basis of Tooth Type

| Tooth Type | 2019<br>n=4146 | 2020<br>n=2140 |
|---|---|---|
| Maxilary Teeth | | |
| Central incisor | 110 (2.7%) | 61 (2.9%) |
| Lateral incisor | 170 (4.1%) | 101 (4.7%) |
| Canine | 126 (3%) | 69 (3.2%) |
| 1st premolar | 328 (8%) | 149 (7.1%) |
| 2nd premolar | 222 (5.3%) | 149 (7.1%) |
| 1st molar | 370 (9%) | 176 (8.4%) |
| 2nd molar | 258 (6.3%) | 129 (6.1%) |
| 3rd molar | 348 (8.5%) | 172 (8.2%) |
| Mandibular Teeth | | |
| Central incisor | 70 (1.7%) | 30 (1.4%) |
| Lateral incisor | 92 (2.2%) | 42 (2%) |
| Canine | 146 (3.5%) | 31 (1.4%) |
| 1st premolar | 216 (5.3%) | 75 (3.5%) |
| 2nd premolar | 174 (4.2%) | 104 (4.9%) |
| 1st molar | 570 (14%) | 348 (16.6%) |
| 2nd molar | 258 (6%) | 179 (8.5%) |
| 3rd molar | 684 (16.8%) | 325 (15.5%) |

Table 3: Reason of Tooth Extraction

| Etiology | 2019<br>n=4146 | 2020<br>n=2140 | P- Value |
|---|---|---|---|
| Periodontal | 1600 (38.5%) | 900 (42%) | (P < 0.001) |
| Orthodontics purpose | 462 (11.1%) | 242 (11.3%) | |
| Prosthodontics purpose | 600 (14.4%) | 250 (11.6%) | |
| Non-restorable teeth | 1484 (35.7%) | 74 8 (34.9%) | |

## DISCUSSION

COVID-19 is a class B infection, is managed accordingly for this class were implemented by the government in 2020.[2] This has started protocols to limit its spread. The measures taken decrease intermingling among persons that has reduced the number of visits among the patients Furthermore, reminiscent of SARS, diagnosed cased of pneumonia increased from the start of COVID-19 resulting in decreased in dental patients.[11]

The COVID-19 epidemic has greatly changed how current medical procedures are carried out, including dental treatment. There have been fewer visits and fewer operations conducted as a result of the concern about SARS-CoV-2 infection and the need for stronger protective measures. This study was carried out to see the patient inflow at oral and maxillofacial surgery OPD before and during COVID-19 outbreak. We find that percentage of adolescents and elder patients with > 50 years of age, who visited for dental extraction were slightly more in 2019 than in 2020, which is similar with the study of Jie Bai et al.[11] This is because they have weak immunity which cause them more susceptible respiratory disease and less visitsto hospitals in pandemic currently, the prognosis of elderly patients is poor.[2] Majority of population have limited themselves at home during the outbreak, fewer who would normally visit the hospital for toothache, medication.

The diagnosed cases with dental problem were significantly more in year 2019 than in 2020, this findings is also well supported by the study of Jie Bai et al.[11] In epidemic of COVID-19, few patients avoid to visits the dental clinic with minor or non-urgent dental problems. In past, few patients visited the emergency room of dental clinic with minor or non-urgent dental problems because most of the public hospitals are inexpensive and not put the extra burden on patients[12] , while fewer patient came to emergency due to an urgent need for treatment, like extraction of teeth.[13]

The most common types of oral conditions in this study were periodontal problems and non-restorable teeth. The percentages of patients with periodontal problems were slightly lower in 2019 than in 2020. We have seen that patients in pandemic were having more periodontal problems that require them to visit dental clinic.

COVID-19 is considered as extremely transmissible virus and asymptomatic patients of COVID-19 can transmit disease and are the major source of infection. A closed environment is responsible for increasing the concentration of infected aerosols and ultimately transmission of the COVID-19 infection;[2]these transmission conditions can be met while endodontic treatment.[14] Consequently, analgesics were used as alternative therapy and only consultation for asymptomatic patients. However, it is thought in this study that antimicrobial and analgesics might be usually given to some patients, so these medications might be used to alleviate the signs and symptoms.

At the beginning of the COVID-19 pandemic, there was a considerable decline in the number of patients visiting the OPD in addition to a major reduction in the spectrum of dental treatments that our Center offered. Restricting admittance to emergency patients during the first pandemic wave only had a negative financial impact on dental offices. There are still much more patients who need tooth extraction in public sector facilities than in private ones, notwithstanding a decline in the overall patient population.

## CONCLUSION

COVID-19 is not only responsible for affecting the large population of world with infection but also affects the pattern of oral diseases, its services, and the frequency of visits to advance dental care centre. The most common reason for tooth extraction was periodontal problem followed by non-restorable tooth, meanwhile the percentage of the conservative treatments raised during the COVID-19 pandemic.

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