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# An Audit of the Impact of Countrywide Lockdown During Covid-19 Pandemic on Utilization of Dental Services in India

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## ABSTRACT

**Introduction:** The global pandemic resulting from the coronavirus disease of 2019 (COVID-19) outbreak has caused significant limitations in the public's access to routine dental and medical care.

**Objective:** To audit the impact of the COVID-19 Pandemic on the utilization of dental services.

**Methods:** The present retrospective study was conducted in the Department of Oral Medicine and Radiology in collaboration with the Public Health Dentistry Department, Christian Dental College and Hospital Ludhiana. The hospital records of the 972 patients who visited the hospital OPD during the lockdown were analyzed.

**Results:** Men sought emergency treatment more frequently (54.8%) compared to women (45.2%). Approximately 63% of the patients reported had endodontic emergencies like pulpitis, symptomatic alveolar abscess, symptomatic apical periodontitis and failed root canal treatments. The oral surgery department received a patient turnout of around 20% with emergencies like pain in grossly decayed teeth, impacted teeth, road traffic accident cases, dental fracture, neuralgias, tumour and MPDS patients. Prosthetic visits were around about 8%.

**Conclusion:** COVID-19 pandemic decreased the utilization of non-urgent dental services significantly. This subsequently can negatively impact the dental health of the general public. An immediate decrease in dental service utilization is also anticipated due to the financial downturn in the COVID-19 pandemic.

**Key Words:** COVID-19, Dental Services, Utilization, Emergencies, Pulpitis, Trauma

## INTRODUCTION

Pandemics have tormented civic establishments all through mankind's history, with the earliest recorded episode of Plague of Athens during the Peloponnesian War in 430 Before Christ. A portion of the other significant pandemics that changed mankind's history incorporates Antonine plague (165 Anno Domini) that started with the Huns, in Athens, this plague proceeded until around 180 Anno Domini). Somewhere in the range of 1347 and 1351, Black Death or bubonic plague spread all through Europe. These pandemics impact affected human culture, from slaughtering enormous rates of the worldwide popu-

lace to making people contemplate bigger inquiries concerning life.

On March 11, 2020, the World Health Organization declared that the COVID-19 infection was authoritatively a pandemic in the wake of barrelling through 114 nations in a quarter of a year and contaminating more than 118,000 individuals. Also, the spread had been unabated from that point forward. COVID-19 is caused by Novel Coronavirus—a new strain that was not previously found in humans. Symptoms include respiratory problems, fever and cough, and can lead to pneumonia and death. Like SARS, it spreads through droplets from sneezes and by direct or indirect contact with an in-

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fectured person. It is believed that the first case for this virus was reported in China on November 17, 2019, in the Hubei Province, and it went unrecognized. The literature shows that many dental procedures produce aerosols and droplets that are contaminated with bacteria, viruses, and blood, and have the potential to spread infections to dental personnel and other people in the dental office.<sup>1</sup>

The health authorities in our country ordered the dental institutions to suspend general non-emergency dental treatment while providing emergency dental services only. Policy factors and personal considerations alike deterred patients from seeking dental care except in an emergency. Therefore, a critical challenge is to determine how dental emergency institutions should respond to utilization changes in the general population created by the COVID-19 epidemic. Hence the present retrospective study was aimed to assess the impact of the COVID-19 epidemic on utilization patterns of dental services in India.

## MATERIALS AND METHODS

### Study Design

The present retrospective study was conducted in the Department of Oral Medicine and Radiology in collaboration with the Public Health Dentistry Department, Christian Dental College and Hospital Ludhiana. The hospital records of the 972 patients who visited the hospital OPD during the lockdown were analyzed. The study protocol was reviewed by the research committee of the Hospital and granted approval (Letter No. CDC/ERC/2020/03).

### Inclusion criteria

Patients who had visited for the first time and patients with a complete diagnostic record were included.

### Data collection

The patients' demographic characteristics and the reasons for visiting were recorded. The entire data was obtained from the Department of Oral Medicine and Radiology.

### Statistical Analysis

The recorded data was compiled and entered in a spreadsheet computer program (Microsoft Excel 2010) and then exported to the data editor page of SPSS version 19 (SPSS Inc., Chicago, Illinois, USA). Descriptive statistics included computation of percentages.

## RESULTS

Table 1 depicts the total of 972 patients who visited the institution. The majority of the patients 933 (95.9%) visited for the first time.

**Table 1: Number of patients who visited the institution**

Patients visit	N	Per cent (%)
First Visit	933	95.9
Revisit	39	4.1
Total	972	100.0

Table 2 revealed that majority of the patients 223 (23.9%) visited belong to the 33-42 years of age group followed by 182 (19.5%) in 43-52 years of age, 169 (18.1%) belongs to 53-62 years of age and 151 (16.2%) in 23-32 years of age group.

**Table 2: Age distribution of study population**

Age (Years)	N	Per cent (%)
3-12	61	6.5
13-22	52	5.6
23-32	151	16.2
33-42	223	23.9
43-52	182	19.5
53-62	169	18.1
63-72	72	7.7
>72	23	2.5
Total	933	100.0
Mean±SD		42.21±17.24

Table 3 depicted that out of a total of 933 were visited for the first time; the majority 511 (54.8%) were male and the rest 422 (45.2%) were female.

**Table 3: Gender distribution of the study population**

Gender	N	Per cent (%)
Female	422	45.2
Male	511	54.8
Total	933	100.0

Out of 933 patients majorities 384 (41.2%) patients provisionally diagnosed with dental caries with pulpitis followed by 103 (11.0%) periapical abscess, 96 (10.3%) apical periodontitis, 81 (8.7%) dislodged crown, prosthesis and restoration, 59 (6.3%) root stumps, 51 (5.5%) impacted tooth and 40 (4.3%) miscellaneous conditions (Table 4).

**Table 4: Distribution of Provisional Diagnosis in the study population**

Provisional Diagnosis	N	Per cent (%)
Dental Caries with Pulpitis	384	41.2
Periapical Abscess	103	11.0
Apical Periodontitis	96	10.3

**Table 4: (Continued)**

Provisional Diagnosis	N	Per cent (%)
Root Stumps	59	6.3
Impacted Tooth	51	5.5
Dislodged Crown, Prosthesis and Restorations	81	8.7
Space Infection	13	1.4
Fractured Tooth	11	1.2
Tooth Mobility	13	1.4
Cervical Abrasion	15	1.6
Faulty RCT	16	1.7
Edentulous	14	1.5
Herpetic Lesion	5	0.5
MPDS	5	0.5
Tumor	7	0.8
Trigeminal Neuralgia	4	0.4
RTA/Trauma	9	1.0
Miscellaneous	40	4.3
Regular Check-up	7	0.8
Total	933	100.0

## DISCUSSION

This retrospective study gave an insight into the impact of COVID-19 on dental services and the pattern of services sought during the lockdown phase. To prevent the spread of the virus restrictions and cautions were laid by the Indian government and the Dental Council of India. Although the private sector saw a complete shutdown Christian Dental College and Hospital Ludhiana continued to offer emergency dental services.

Christian Dental College and Hospital Ludhiana provided its services to its patients during the lockdown of seventy Days. The number of new patients seeking treatment was significantly higher as compared to revisits. This may be attributed to the restricted movement during the lockdown and to the apprehension of getting infected in a hospital setup. Approximately 65-66% of the patients reported had endodontic emergencies like pulpitis, symptomatic alveolar abscess, symptomatic apical periodontitis and failed root canal treatments. The oral surgery department received a patient turnout of around 20% with emergencies like pain in grossly decayed teeth, impacted teeth, road traffic accident cases, dental fracture, neuralgias, tumour and MPDS patients. Prosthetic visits were around about 8%. This was found in agreement with the results of the study conducted by Tramini P et al. (2010).<sup>2</sup>

The results demonstrated a decreased number of patients seeking treatment for non-urgent procedures like orthodontic

treatment, dental caries with no pain, scaling, root planning, implant and prosthetic work. This result is in agreement with studies showing that patient on the urgency scale 4 of the WHO index sought treatment more frequently than the scale (0-3).<sup>3</sup> The age group most frequently visiting the hospital for an emergency was 35 to 42 year. This is also by the WHO index age of dental needs. It is stated that the full effect of dental and periodontal problems manifest in this age group.<sup>4</sup> Lesser number of children and elderly reporting for treatment could also be because this age group was put at high risk during COVID-19. It was also observed that men sought emergency treatment more frequently (54.8%) as compared to women (45.2%). It might be attributed that females were more apprehensive about undergoing dental treatment procedures because of acute viral respiratory tract infections than their male counterparts.<sup>5,6</sup>

## CONCLUSION

Within the limits of this study, it can be concluded that the COVID-19 pandemic decreased the utilization of non-urgent dental services significantly. This subsequently can negatively impact the dental health of the general public. An immediate decrease in dental service utilization is also anticipated due to the financial downturn in the COVID-19 pandemic. This emphasizes the need for more awareness for dental insurance so that patients continue to finance their dental need in financial downturns. On the other hand, accumulated dental problems may also increase the demand for dental services in future. Hence the present study opens new vistas for future research.

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Authors contribution:

Gupta VV and Thomas AM- Research Designing and Analysis

Chitkara N and Mathew RS- Data entry

Gupta VV and Atwal PK- Manuscript Writing

Gandhi S and Kapoor S- Proof Reading

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