

## Assessment of impact of COVID- 19 on utilization of dental services

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### ABSTRACT:

**Background:** *The risk of SARS-CoV-2 transmission cannot be eliminated during aerosol-generating dental procedures in most dental settings. The present study was conducted to assess impact of COVID- 19 on utilization of dental services.*

**Materials & Methods:** *485 patients who obtained dental treatment before and during COVID- 19 period were enrolled. Type of complaints for which patients visited dental offices was recorded.*

**Results:** *Out of 485, males were 310 and females were 175. During pre- COVID period, 170 patients <18 years and 210 above 18 years visited dental office while during COVID period, 40 below 18 years and 65 above 18 years reported to dental clinics. The common complaints were periapical seen in 120 and 45, cellulitis in 80 and 30, cellulitis in 70 and 10 and trauma in 110 and 20 in pre- COVID and during COVID period. The difference found to be significant ( $P < 0.05$ ).*

**Conclusion:** *COVID- 19 had strong impact on utilization of dental services among patients.*

**Key words:** *COVID- 19, Cellulitis, Trauma*

### Introduction

Since its emergence in December 2019, severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) and its associated disease (COVID-19) caused a global public health crisis and was characterized as a pandemic on March 11, 2020, by the World Health Organization.<sup>1</sup> Because the risk of SARS-CoV-2 transmission cannot be eliminated during aerosol-generating dental procedures in most dental settings, the Centers for Disease Control and Prevention (CDC) recommended that dental services be limited to emergency visits and that

elective procedures, surgeries, and nonurgent dental visits be postponed in both academic and private dental clinics during this time.<sup>2</sup>

Since late January 2020, the Chinese authorities advised that people go to crowded places as little as possible to avoid cross-infection.<sup>3</sup> On the other hand, subjects fear of COVID-19, because of its novel and rapid transmission, make them reluctant to go to public places including medical and dental hospitals. 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>4</sup> The health authorities of some cities in China 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.<sup>5</sup> The present study was conducted to assess impact of COVID-19 on utilization of dental services.

### Materials & Methods

The present study comprised of 485 patients who obtained dental treatment before and during COVID-19 period. All were enrolled after they gave their written consent to participate.

Data related to them such as name, age, gender etc. was recorded. Type of complaints for which patients visited dental offices was recorded. Duration of treatment, their residence and fear related to COVID-19 was recorded. Results thus obtained were statistically analyzed. P value less than 0.05 was considered significant.

### Results

**Table I Distribution of patients**

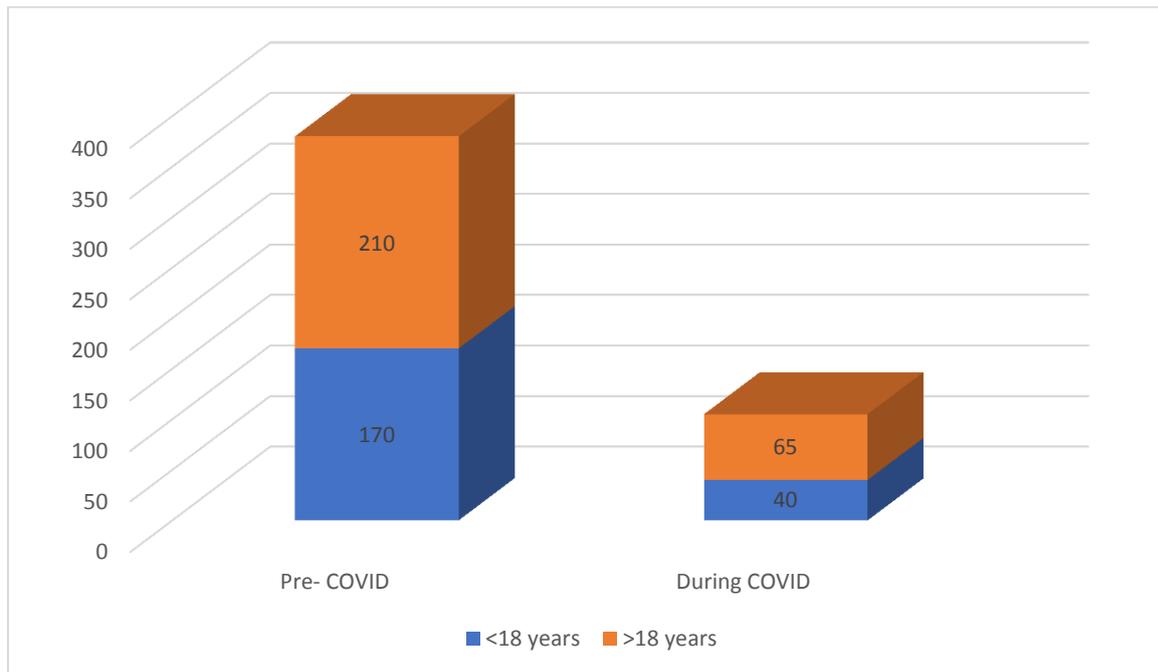
Total- 485		
Gender	Male	Female
Number	310	175

Table I shows that out of 485, males were 310 and females were 175.

**Table II Age wise distribution of patients**

Period	<18 years	>18 years	P value
Pre- COVID	170	210	0.09
During COVID	40	65	0.05
P value	0.01	0.001	

Table II, graph I shows that during pre- COVID period, 170 patients <18 years and 210 above 18 years visited dental office while during COVID period, 40 below 18 years and 65 above 18 years reported to dental clinics. The difference found to be significant (P< 0.05).

**Graph I Age wise distribution of patients****Table III Complaint for visiting dental offices**

Complaints	Pre- COVID	During COVID	P value
Pulpitis	120	45	0.01
Periapical lesions	80	30	0.05
Cellulitis	70	10	0.02
Trauma	110	20	0.01
Total	380	105	

Table III shows that common complaints were periapical seen in 120 and 45, cellulitis in 80 and 30, cellulitis in 70 and 10 and trauma in 110 and 20 in pre- COVID and during COVID period. The difference found to be significant ( $P < 0.05$ ).

### Discussion

Corona Virus Disease of 2019 (COVID-19) has been declared a pandemic situation by the WHO on March 11, 2020. Current research suggest that COVID-19 virus is primarily transmitted through respiratory droplets and contact routes. Droplet transmission occurs when a person is in close contact with someone who has respiratory symptoms (e.g., coughing or sneezing).<sup>6</sup> Thereby, this increases risk of having his/her mucosae (mouth and nose) or conjunctiva (eyes) exposed to potentially infective respiratory droplets. Airborne transmission may be possible in specific circumstances and settings in which procedures or support treatments that generate aerosols are performed. Unique characteristics of dental procedures lead to a large number of droplets and aerosols generated.<sup>7</sup> The standard protective measures in daily clinician work seem to be ineffective in halting the spread of the virus. Recent observations have hinted that even patients with asymptomatic COVID-19 can be carriers of Severe Acute Respiratory

Syndrome Coronavirus 2 (SARS-CoV-2).<sup>8</sup> This has posed an extreme challenge to identify and quarantine such patients. Dentists are, therefore, required to undertake stringent personal protective measures for all cases and avoid or minimize operations that produce droplets or aerosols. For areas of COVID-19 spread it has been recommended that nonemergency dental practices be postponed.<sup>9</sup> The present study was conducted to assess impact of COVID-19 on utilization of dental services.

In present study, out of 485, males were 310 and females were 175. Guo et al<sup>10</sup> in their study found that there were 2,537 patients involved in this study. Thirty-eight percent fewer patients visited the dental urgency at the beginning of the COVID-19 epidemic than before. The distribution of dental problems has changed significantly. The proportion of dental and oral infection raised from 51.0% of pre-COVID-19 to 71.9% during COVID-19, and dental trauma decreased from 14.2% to 10.5%. Meanwhile, the non-urgency cases reduced to three-tenths of pre-COVID-19

We observed that during pre-COVID period, 170 patients <18 years and 210 above 18 years visited dental office while during COVID period, 40 below 18 years and 65 above 18 years reported to dental clinics. Shrestha et al<sup>11</sup> assessed dental problems faced by patients during the COVID-19 outbreak and the possible reasons in failing to seek dental care. Mean age of the participants was 43.7 years (SD: 16.1). Most of them (63%) reported not having had an oral examination in the past year while 62% reported being unable to seek dental treatment during the pandemic. Pain, sequelae of pain and other self-perceived urgent causes were identified as the major problems faced by the participant. Similarly, the reasons for not being able to seek dental treatment were grouped as fear of transmission, lack of transportation and lockdown, unavailability of health services, misinformation, lack of communication from hospital regarding its services, and deferred treatment by the hospitals.

In present study common complaints were periapical seen in 120 and 45, cellulitis in 80 and 30, cellulitis in 70 and 10 and trauma in 110 and 20 in pre-COVID and during COVID period. Langella et al<sup>12</sup> in their study a total of 466 patient interactions occurred during this period, resulting in 199 patients advised by phone and 267 clinical encounters. The most common dental emergencies were severe dental pain from pulpal inflammation (27.7% of clinical encounters) followed by a surgical postoperative visit (13.1%). The most frequent procedures were extractions (13.9% of clinical encounters) and surgical follow-up (13.5%); 50.2% of the clinical encounters were categorized as aerosol generating, and 86.1% of encounters would have required treatment in a hospital emergency department if dental care was not available. There were no known transmissions of severe acute respiratory syndrome coronavirus-2 among clinic providers, patients, or staff during this period.

## Conclusion

Authors found that COVID-19 had strong impact on utilization of dental services among patients.

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