



A COMPARATIVE RETROSPECTIVE STUDY TO EVALUATE THE IMPACT OF COVID 19 ON DENTAL OPD IN CHHATTISGARH INSTITUTE OF MEDICAL SCIENCES, BILASPUR, CHHATTISGARH.

Dental Science

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ABSTRACT

Background: The COVID-19 disease, also known as the corona virus disease, is an ongoing global pandemic of corona virus 2019 (COVID-19) caused by severe acute respiratory syndrome corona virus 2 (SARS-CoV-2). The virus was first identified in December 2019 in Wuhan, China. The World Health Organization declared a Public Health Emergency of International Concern regarding COVID-19 on 30 January 2020, and later declared a pandemic on 11 March 2020. As of 28 May 2021, more than 168 million cases have been confirmed, with more than 3.51 million confirmed deaths attributed to COVID-19, making it one of the deadliest pandemics in history. The first case in Chhattisgarh state was found in capital Raipur on 19th March 2020. The first case in Bilaspur was found on 23rd March 2020. The virus that causes COVID-19 is mainly transmitted through droplets generated when an infected person coughs, sneezes, or exhales. These droplets are too heavy to hang in the air, and quickly fall on floors or surfaces. People can be infected by breathing in the virus if they are within close proximity of someone who has COVID-19, or by touching a contaminated surface and then their eyes, nose or mouth. Covid-19 infection also causes problems for the management and follow up of dental patients with their regular check-up interrupted mostly due to nationwide lockdown. **Objective:** To evaluate the impact of Covid-19 on dental OPD in Chhattisgarh Institute of Medical Sciences, Bilaspur, Chhattisgarh during Covid-19 pandemic **Method:** This retrospective comparative clinical study is conducted in the department of Dentistry, Chhattisgarh Institute of Medical Sciences, Bilaspur, Chhattisgarh. The 1 year OPD data from 20 March 2019 to 20 March 2020 is compared with the data from Covid-19 era from 20 March 2020 to 20 March 2021. Frequency tables are used to evaluate and measure the data from the study to describe the impact of Covid-19 on dental patients' treatment **Result:** The total Dental OPD registered in Pre Covid-19 yr was 8390 i.e. from 20 March 2019 to 20 March 2020, 5246 out of 8390 dental patients (62.50%) belonged to 18-45 years age group followed by 34% in >45 year group and only 3.4% of OPD patients were below 18 yrs of age. Whereas in Covid-19 yr i.e. from 20 March 2020 to 20 March 2021, 71.76% patients were in 18-45 year age group followed by 26.68% in >45 years age group and only 1.5% patients were below 18 yrs. 5710 out of 8390 (68.05%) dental patients were male in Pre Covid-19 yr whereas female OPD patients were 31.9%, no patients of transgender community was reported. During Covid-19 pandemic year males were predominant in OPD i.e. 58.23% whereas female OPD population was 44.9%. In Pre Covid-19 yr, 4850 out of 8390 (57.8%) patients of lower socioeconomic strata came to dental OPD, on the other hand 38.87% patients were of middle class economy status and only 3.3% was belonged to upper class. Whereas in Covid-19 pandemic year lower class patients reported was 64% and upper class were 2.6%. In Pre Covid-19 the total OPD registered in Dentistry department, CIMS was 8390, and in Covid-19 pandemic year the total dental OPD registered was 4767. **Conclusion:** We observed in our study that in comparison to Pre Covid-19 yr there is significant decrease in total no. of OPD during Covid-19 pandemic year by 56.8%. During covid-19 pandemic the patients of 18-45 year age group were increased by 9.26% while OPD of >45 year age group was decreased by 7.32%. Lower SES patients were increased by 6.2% during Covid-19 pandemic; most of the OPD based aerosols generating dental procedures were markedly reduced because of the fear of covid-19 infection.

KEYWORDS

Covid-19, Pandemic, OPD, Dentistry, Procedure.

INTRODUCTION

COVID-19 is the disease caused by a new corona virus called SARS-CoV-2. WHO first learned of this new virus on 31 December 2019, following a report of a cluster of cases of 'viral pneumonia' in Wuhan, People's Republic of China.^{[1][2]} The most common symptoms of COVID-19 are fever, dry cough, fatigue other symptoms that are less common and may affect some patients include loss of taste or smell, nasal congestion, sore throat, headache, muscle or joint pain, different types of skin rash, nausea or vomiting, diarrhoea, chills or dizziness.^{[3][4]} Stay safe by taking some simple precautions, such as physical distancing, wearing a mask, especially when distancing cannot be maintained, keeping rooms well ventilated, avoiding crowds and close contact, regularly cleaning your hands, and coughing into a bent elbow or tissue.^{[5][6]} As of 28 May 2021, more than 170 million cases have been confirmed, with more than 3.51 million confirmed deaths attributed to COVID-19, making it one of the deadliest pandemics in history.^[7] The first case in Chhattisgarh state was found in capital Raipur on 19th March 2020.^[8] The first case in Bilaspur was found on 23rd March 2020. The emergence of the novel virus SARS-CoV-2 has caused morbidity, mortality and societal disruption on a global scale. The use of hand pieces and ultrasonic instruments during dental procedures unavoidably results in the generation of blood and saliva droplets consequently; these droplets could contaminate the dental instruments and the office environment.^[9] Hence, both dental practitioners and patients could be at risk of being infected with microbial pathogens. In this regard, researchers mentioned that dental clinics might be a possible transmission source of viruses such as human

immunodeficiency virus (HIV) and hepatitis B virus (HBV); these viruses could transmit during dental practice to the patients and also the practitioners.^[10] The main concern is that health services have been partially or completely disrupted in many countries and states. Overall 46% for dental management is disrupted by covid-19 the key reasons behind it are the reassignment of health staff from their primary service to support COVID-19.^[11] But the most common reasons for discontinuing or reducing services were cancellations of planned treatments, a decrease in public transport available and a lack of staff because health workers had been reassigned to support COVID-19 services. In one in five countries (20%) reporting disruptions, one of the main reasons for discontinuing services was a shortage of medicines, diagnostics and other technologies. Unsurprisingly, there appears to be a correlation between levels of disruption to services for treating dental patients and the evolution of the COVID-19 outbreak in a country. Services become increasingly disrupted as a country moves from sporadic cases to community transmission of the corona virus. Alternative strategies for continuing care being implemented like telemedicine to replace in-person consultations.

OBJECTIVE:

To evaluate the impact of Covid-19 on dental patients OPD in Chhattisgarh Institute of Medical Sciences, Bilaspur, Chhattisgarh during Covid-19 pandemic.

MATERIAL AND METHOD

Method: This retrospective comparative clinical study is conducted in

the department of Dentistry, Chhattisgarh Institute of Medical Sciences, Bilaspur, Chhattisgarh. The 1 year pre Covid-19 OPD from 20 March 2019 to 20 March 2020 is compared with the data from Covid-19 era from 20 March 2020 to 20 March 2021. Frequency tables, comparative charts are used to evaluate and measure the data from the study to describe the impact of Covid-19 on dental OPD patients.

Major Variables

- 1) Age
- 2) Gender
- 3) Socioeconomic status
- 5) OPD data of pre Covid-19 year
- 6) OPD data of Covid-19 year

RESULTS

This retrospective observational clinical study involved the dental patients' OPD data of pre Covid-19 year from 20 March 2019 to 20 March 2020 and data of first year of Covid-19 year from 20 March 2020 to 20 March 2021. This study is conducted in department of Dentistry, CIMS hospital, Bilaspur Chhattisgarh. All patients' OPD data of both years were thoroughly evaluated and studied. The results are as follows:

Age

In Pre Covid-19 yr i.e. from 20 March 2019 to 20 March 2020, 5246 out of 8390 dental patients (62.50%) were belonged to 18-45 years age group followed by 34% in >45 year group and only 3.4% of OPD patients were below 18 yrs of age. Whereas in Covid-19 yr i.e. from 20 March 2020 to 20 March 2021, 71.76% patients were in 18-45 year age group followed by 26.68% in >45 years age group and only 1.5% patients were below 18 yrs. This data shows that during covid-19 pandemic the patients of 18-45 year age group were increased by 9.26% while OPD of >45 year age group was decreased by 7.32%.

Table 1 Age wise distribution of OPD patients

Age Range(yr)	< 18	18-45	>45	Total
Pre Covid-19 yr	286(3.4%)	5246(62.50%)	2858(34%)	8390
Covid-19 yr	74(1.5%)	3421(71.76%)	1272(26.68%)	4767

Gender

5710 out of 8390 (68.05%) dental patients were male in Pre Covid-19 yr whereas female OPD patients were 31.9%, no patients of transgender community was reported. During Covid-19 pandemic year males were predominant in OPD i.e. 58.23% whereas female OPD population was 44.9%, no patients of transgender community was reported. This data revealed that male dental patients' OPD was increased in covid-19 pandemic than females.

Table 2 Gender wise Distribution of OPD patients

Gender	Male	Female	Total
Pre Covid-19 yr	5710(68.05%)	2680(31.9%)	8390
Covid-19 yr	2622(58.23%)	2145(44.9%)	4767

Socio-economic status

In Pre Covid-19 yr, 4850 out of 8390 (57.8%) patients of lower socioeconomic strata came to dental OPD, on the other hand 38.87% patients were of middle class economy status and only 3.3% was belonged to upper class. Whereas in Covid-19 pandemic year lower class patients reported was 64% and upper class were 2.6%. This data clearly stated that during the pandemic year the patients of lower socioeconomic strata were increased while upper class patient were decreased.

Table 3 Socio-economic status wise distribution of patients

SES	Lower Class	Middle Class	Upper Class	Total
Pre Covid-19 yr	4850(57.8%)	3262(38.87%)	278(3.3%)	8390
Covid-19 yr	3052(64%)	1591(33.37%)	124(2.6%)	4767

Total OPD data from 20 march 2019 to 20 march 2020

In Pre Covid-19 yr i.e. from 20 March 2019 to 20 March 2020 the total OPD registered in Dentistry department, CIMS was 8390, these patients received treatment in various forms symptomatic oral treatment, OPD based procedures, pain management(oral), other conservative management in different forms. Extraction of teeth was performed in 400 patients, scaling was done in 5.7% of patients followed by restoration in 1.3% and biopsy in 3.9% other oral diseases constitute the major 82.8% bulk of OPD.

Table 4 Total OPD data from 20 March 2019 to 20 March 2020

Extraction	Scaling	Suturing	Restoration	Biopsy	others	Total
400	479	114	117	333	6947	8390
4.7%	5.7%	1.3%	1.3%	3.9%	82.8%	100%

Total OPD data from 20 march 2020 to 20 march 2021

In Covid-19 pandemic year the total dental OPD registered was 4767, amongst them Extraction of teeth was performed in 128 patients, scaling was done in only 9 patients followed by restoration in 3 and biopsy in 46 patients other oral diseases constitute the major 93.55% bulk of OPD.

Table 5 Total OPD data from 20 March 2020 to 20 March 2021

Extraction	Scaling	Suturing	Restoration	Biopsy	others	Total
128	9	43	3	46	4460	4767
2.6%	0.1%	0.9%	0.06%	0.09%	93.55%	100%

DISCUSSION

The corona virus pandemic has disrupted all forms of health care services including communicable and non communicable diseases and patients seeking treatment for oral health diseases. In Chhattisgarh state the first case of Covid-19 was found in AIIMS, Raipur on 19th March 2020. The first case in Bilaspur was found on 23rd March 2020. The country has experienced the first nationwide lockdown from 24 March 2020 for 21 days limiting the movement of entire population as a preventive measure against the Covid-19 pandemic.^[12] The lockdown continued in different phases till 31 May 2020. During this time the movement of entire population was limited which resulted in postponement and delaying of many health care services including dental care. Consequently the deterioration of health status of dental patients occurred. Many patients reached the hospital amidst pandemic and benefited. Overall 46% for dental management is disrupted by covid-19 the key reasons behind it is the reassignment of health staff from their primary service to support COVID-19 services.^[11] As the time passes the city Bilaspur chhattisgarh was also burdened with infected covid-19 positive patients, thus Medical College Hospital was transformed to Covid-19 isolation Centre later on Covid-19 Dedicated centre, entire staff from medical college and hospital was rearranged for the covid-19 care services which included the dental care staff also which further aided the disruption of dental care services in our centre. Meanwhile Dental OPD and ward was functioning well despite the reduced manpower and skilled staff. *Ahmadi, H., Ebrahimi, A. et al* found in their study in Iran that 70% of emergency dental procedures are interrupted or cancelled during the pandemic; similarly in our study we observed that 56% of dental procedures are interrupted during the pandemic.^[13] *American Dental Association* in their survey among 19000 dentists reported that 76% of OPD patients are affected during the pandemic and 19% of dentists are not coming to their clinics in fear of Covid-19 infection. Occupational Safety and Health Administration has mentioned that using remote dental consultations should be considered for the non-emergent cases during the pandemic.^[14] Additionally, before the current pandemic, remote consultation was found to have sufficient quality for oral treatments. The telehealth-based delivery of dental services seems to be an attractive and flexible concept, especially during these unprecedented times. Despite this, most clinics do not have the proper equipment such as network infrastructures and adequately trained staff to provide telehealth services.^[15]

CONCLUSION

We observed in our study that in comparison to Pre Covid-19 yr there is significant decrease in total no. of OPD during Covid-19 pandemic year by 56.8%. During covid-19 pandemic the patients of 18-45 year age group were increased by 9.26% while OPD of >45 year age group was decreased by 7.32%. Lower SES patients were increased by 6.2% during Covid-19 pandemic, most of the OPD based dental procedures are markedly reduced because of the fear of covid-19 infection.

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