

Changing trends of Dental patients after covid-19 lockdown at a tertiary healthcare centre in the most backward district of India

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Abstract

Aim: The aim of the present study was to assess the impact of the present study was conducted to assess the impact of the COVID-19 related lockdown on the changing trends in number and attitude of patients reporting to the department of Dentistry at Shaheed Hasan Khan Mewati Government Medical College (SHKM GMC), Nuh. COVID-19 has affected the world in an unprecedented fashion. On March 11, 2020 the World Health Organization (WHO) declared COVID-19 a pandemic. Many countries of the world, including India, adopted lockdown to curb community transmission of disease. The lockdown was a huge blow to the regular health care facilities as all standard out-patient departments across hospitals and clinics in India were shut and it was advised that all elective surgeries be deferred.

SHKM, GMC, a tertiary healthcare centre located in Nuh district, Haryana state in India with effect from April 8, 2020 was declared an exclusive COVID-19 healthcare facility to optimize available manpower and resources for care and treatment of COVID-19 positive patients only, by the State Government of Haryana. Department of Dentistry in SHKM, GMC which used to cater to an OPD of around 60-70 patients per day on an average before lockdown also had to close its services.

Material & Methods: A prospective study was undertaken for the patients reporting to the outpatient department of Dentistry, SHKM GMC Nuh post lockdown 3.0 i.e. from May 18, 2020 to August 15, 2020 to determine the impact of the COVID-19 related lockdown on the changing trends in number and attitude of patients.

Results: The total number of patients reporting to the outpatient department of dentistry came down from 60-70 per day to 3-4 per day.

Conclusion: In our study it was found that COVID-19 related lockdown drastically reduced the number of patients visiting the out-patient department of Dentistry in SHKM, GMC to about 90% which could be due to patients could be due to limited timing of OPD registration, non availability of public transport and fear of getting quarantined at the hospital if patients were found to be COVID positive. However, it was found the majority of the patients who visited the hospital seemed to be in a normal state of mind and without any associated fears. Patients were content over the treatment advised to them and understood the limitations of the management during the pandemic

Clinical Significance: Covid-19 pandemic is here to stay. Control of the pandemic through vaccine is still to be seen in the future. We are still relying on preventive measures of social distancing. Therefore, there is need to understand how to reboot the outpatient healthcare model to prevent the disease from spreading further.

Keywords: Aarogya Setu, Aerosol, COVID-19, Dentistry, Lockdown, Mobile-Health applications, Out-patient department.

Introduction

COVID-19 has affected the world in an unprecedented fashion. COVID-19 was declared a Public Health Emergency of International Concern (PHEIC) in January 2020 and on March 11, 2020 the World Health Organization (WHO) declared COVID-19 a pandemic.¹⁻⁴

In India at that time there was presence of 519 confirmed cases and 10 reported deaths due to COVID-19. The Government of India declared a total lockdown across the country as a part of its efforts to control the disease spread. At the stroke of midnight on March 24, 2020

restrictions came into force for 21 days (lockdown 1.0). As a result of this lockdown, all regular out-patient departments across hospitals and clinics in India were shut and it was advised that all elective surgeries be deferred.^{5, 6}

Shaheed Hasan Khan Mewati Government Medical College (SHKM, GMC), is a tertiary healthcare centre located in Nuh district, Haryana state in India. In view of need to minimize possibility of community transmission of ongoing COVID-19 epidemic and also to optimize available manpower and resources for care and treatment of COVID-19 suspected/positive patients SHKM, GMC decided to close the routine walk in outpatient department (OPD) and indoor patient department (IPD) of all specialties. With effect from April 8, 2020 SHKM, GMC was declared an exclusive COVID-19 healthcare facility catering only to COVID-19 positive patients by the State Government of Haryana. Department of Dentistry in SHKM, GMC which used to cater to an OPD of around 60-70 patients per day on an average before lockdown also had to close its services.

Lockdown 1.0 was followed by lockdown 2.0 which remained in effect from April 14, 2020 to May 3, 2020 and further by lockdown 3.0 which was in effect from May 3, 2020 to May 17, 2020. During this period, SHKM, GMC continued rendering services to COVID-19 positive patients and OPD's and IPD'S of all departments remained suspended. The staff of department of Dentistry was also actively involved in performing the various isolation ward duties allotted to them during this period. The number of COVID-19 positive patients being treated at SHKM, GMC during the month of April, 2020 was about 100 and they were mostly members of Tablighi Jamaat. Tablighi Jamaat is a religious congregation that took place in Delhi's Nizamuddin Markaz Mosque in early March 2020, was a Coronavirus super-spreader event,

with more than 4,000 confirmed cases and at least 27 deaths linked to the event reported across the country.^{7,8} Half of the Tablighi Jamaat workers tracked throughout Haryana were found in Nuh district.^{9,10} However, with the start of lockdown 4.0 when most of the restrictions were eased by the Government and as the number of COVID-19 patients in the hospital had significantly lowered OPD services were resumed in the hospital from May 18, 2020. With Unlock 1.0 which was announced from June 8, 2020 followed by Unlock 2.0 from July 1, 2020 the Government of India resumed most of the services except working of educational institutions. This led to resurrection of normal day to day activities of people with free vehicular movement across places.

With this background, this study was conceived and a survey was conducted to assess the impact of the COVID-19 related lockdown on the changing trends in number and attitude of patients reporting to the department of Dentistry at SHKM GMC, Nuh.

Materials and methods

A prospective study was undertaken for the patients reporting to the department of Dentistry, SHKM, GMC Nuh post lockdown 3.0 i.e. from May 18, 2020 to August 15, 2020. Ethical clearance was duly obtained from the Institutional Ethical Committee (Project No: EC/OA-28/2020). Patients were fully informed in English/Hindi/Local language about the concept of the study and a written consent was obtained from them. A self-validated questionnaire was delivered on a face-to-face interview basis by the six dental examiners. The questionnaire involved demographic data, patient's knowledge about COVID-19 and precautions taken while coming to the hospital, information about how did patient manage his dental problems (if he had any) during lockdown, perception of the patient on recommencement of the OPD services and satisfaction of the patient to the

services offered to him during this time. (Fig 1). To safeguard both study participants and investigators a screen was placed in between the participants and investigators following social distancing norms. Study participants underwent thermal check before entering the OPD area. Hand sanitization and social distancing protocols were strictly followed along with facial shields used by the investigators. The collected data was entered in to Microsoft Excel and analyzed using SPSS 18 (Statistical Package for Social Sciences) for relevant statistical comparisons. Proportions and percentage were used to describe the findings amongst the study subjects based on their responses.

Results

Total of 225 patients who visited the outpatient department of Dentistry during the period from May 18, 2020 to August 14, 2020 were interviewed. There were 138 males and 87 females in the age group of 15-75 years and 25 children below 14 years. Majority (89%) patients were from Nuh district itself while only 11% came from adjoining areas. 54% of the total study participants were unemployed while 24% were having their small businesses, 14% were daily wage laborers and 8% were employed in a government sector. (Table 1) Basic mobile phone was carried by 63% of the respondents, 29% had a smart phone while 8% had no phone. Among the study participants who possessed smart phone 45% had installed the Whatsapp feature and just 22% were using the ArogyaSetu app."

97% of the patients coming to the OPD were aware of COVID-19 disease. Viral etiology of COVID-19 was known to 57% patients, 22% were aware of the common symptoms of the disease and 19% knew various measures for its prevention like social distancing, face mask, hand washing and coughing and sneezing hygiene. However, 2% patients had no knowledge about the COVID-19

disease. For prevention of COVID-19, 48% patients wore a surgical mask while coming to the hospital and 42% used plain cloth to cover their face. Most of the patients (89%) attending the dental OPD carried a normal attitude during their visit while at least 12% were anxious and scared of contacting infection from hospital staff or premises.

Around 55% patients stated that they did not encounter any dental problem during the lockdown period while 45% reported that they had issued dental illness of some kind. Although, majority of the patients (70%) who suffered a dental problem took no treatment while remaining 18.6% visited a nearby private dentist while 11.4% resorted to home remedies or self-medication. (Table 2)

Post lockdown, 40% patients visited the dental department with chief complaint of dental pain. 16% had carious tooth while other patients complained of other oral problems like sensitivity, mouth ulcers, dental trauma, bleeding gums, inability to open the mouth. No investigations were required in 71.11% patients, 8% were advised extra oral dental radiographs while in 3.11% cases NCCT face was required. Around 87% of the patients were given medication for their problem while 13% were put on oral hygiene measures including warm saline rinses, proper brushing twice daily and use of mouthwash. 63% of the patients who turned up during this period were satisfied with the treatment advised to them as per the protocol, 12% of the patients were not satisfied and had an argumentative attitude while 25% did not show concern”.

Discussion

SHKM GMC is one of the only tertiary health care centre situated in Nuh district of Haryana state, India. According to Niti Aayog report, 101 districts were assessed based on 49 development indicators such as health, education, agriculture, financial inclusion, skill development, and

basic infrastructure where Nuh ranked the lowest across the country (26%).¹¹ the majority of the district's population (88%) resides in rural areas. Only 11.39% lives in urban regions of district. The education statistics reveal that merely 36.6% of females are literate as against 69.94% literacy rate among males.¹²

During the initial wave of the COVID-19 pandemic, hospitals worldwide diverted resources from routine inpatient and outpatient clinics to meet the surge in demand of COVID-19 patients. Post lockdown due to fear of gaining infection from hospital premises many patients deferred their visits to hospital. This led to decrease in the number of patients coming to our hospital as well as in the department of Dentistry at SHKM GMC, Nuh. The daily average OPD at the department of Dentistry prior to lockdown was about 60-70 patients per day. However, post lockdown it reduced to only 3-4 patients per day. (Graph 1) This sharp decline of more than 90% in the number of patients could be due to limited timing of OPD registration, non availability of public transport and fear of getting quarantined at the hospital if patients were found to be COVID positive.

Prior to COVID 19, patients reporting to the hospital were not only from Nuh district, but also from the nearby districts and adjoining states of Haryana like Rajasthan and Uttar Pradesh. Post lockdown it was observed that the maximum number of patient came from Nuh district only. This could be attributed to the fact that no public transport was available for the patient coming from other nearby districts and adjoining states. These impacts resulted from governmental measures (e.g., travel restrictions) as well as individual choices to refrain from travelling in order to reduce exposure and the risk of contamination.¹³

Patients coming to the department of Dentistry were mostly males (61.3%) as compared to females (38%). Due to non availability of public transport females were

dependent on male counterparts to come to the hospital. Also, closure of schools, children at home, closure of work places led to increased household work which resulted in low female patient footfall in the department. Mobile Health applications (mHealth apps) are crucial in the disease containment and management during pandemics and can support health systems in disease surveillance, risk assessment, case identification, contact tracing, and situation monitoring.¹⁴ In India, Aarogya Setu App is a COVID-19 mobile tracking application developed by the National Informatics Centre (NIC), which is under the Ministry of Electronics and Information Technology, Government of India. It informs the users regarding the risks assessment and provides relevant advisories.^{15, 16} Most of the patients reporting to the OPD carried a basic mobile phone and only a few had a smart phone which could be due to low socioeconomic status of the residents and poor internet services in this area. However, among patients having a smart phone very few had Whatsapp feature and Aarogya Setu application installed on their phones. Limited users of Aarogya Setu app in this area this could be due to lower literacy rate of Nuh district (54.08%). Tele-Triaging was not therefore applicable to the residents of this region due to few users of mobile applications like Whatsapp and Aarogya Setu. Most of the respondents were aware of the sign, symptoms and measures to prevent the COVID-19 disease. This reflected that information was being provided at a rapid speed to the people at grass root level to minimize the disease. Patients revealed they got the information from news channels, fellow villagers and health care workers. There was significant level of awareness among the social masses regarding prevention of spread or contacting the contagious disease as patients were aware of preventive measures like covering their faces with either a mask or even a plain cloth, social distancing etc.

Interestingly, majority of the patients seemed to be in a normal state of mind and without any associated fears while visiting the hospital premises. This finding may reflect a general attitude of the public in this area that has been declared as the most backward district of Haryana. The lifestyle of people here is not easy and most of them are poor leading a life full of hardships. Therefore, even during this period of disaster they seemed less worried. Also, there existed an eagerness amongst the masses to get a solution for their ailments that they had been holding onto since long and were looking for a quick relief post-lockdown. However, a few patients seemed scared while their visit to the dental OPD as they thought the hospital to be a *réservoir* of COVID-19 positive patients and thus, cross infection.

55% of the respondents stated that they did not face any oral problems during the lockdown period of confinement but 45% complained of having suffered from some or the other dental problem. Majority patients kept bearing with it without any treatment and waited for the lockdown to be over. On the other hand, some resorted to self medication based on previous prescriptions or peer consultations. Few patients who could not tolerate the pain consulted private dentists in close vicinities.

Most of the patients who visited the dental OPD were managed by provision of the three A's: Advice; Analgesia; Antimicrobials (where appropriate).¹⁷ This was to minimize the spread of COVID-19 due to generation of aerosol. In dental settings, oral fluids like blood and saliva from the patient can create a possible way of spread of the virus to the dentist, assistant and to other patients. Customary dental procedures that include the use of rotating instruments such as the high-speed turbine hand piece and the use of ultrasonic scalers for oral prophylaxis are allied with the production of large quantity of aerosols and droplets from the saliva and blood of the patient.

Before settling on the environmental surfaces and on the medical instruments these can remain suspended in the air for long period and can penetrate the respiratory tract through the nose and mouth.¹⁸ Hence, it is apparent how the aerosols generated during dental treatment can render the operators and patients to menace of cross infection. A few patients who required emergency dental care were treated using standard precautions including the appropriate use of personal protective equipment (PPE) that is, medical mask, gown, gloves, eye protection, N95 masks and aprons along with hand hygiene practices, COVID-19 testing of the patient etc. Patient's satisfaction towards the health services provided by the doctor is very important. 63% of the patients who turned up during this period were satisfied with the treatment advised to them as per the protocol and understood the limitations of the management during the pandemic. 12% of the patients were not satisfied and had an argumentative attitude while 25% did not show concern.

Our study had a few limitations. Firstly this survey was limited to only one tertiary health care centre which is one of the only centres catering to the large population of Nuh and nearby districts of southern part of state of Haryana. The nearby community health centres, public health centres and general hospitals were not included into the study due to which a comparative analysis could not be drawn. It is likely that services were even more affected in those areas.

Secondly, the study was only OPD based and other emergency services and indoor patient services were not included.

Oral health care needs of the community should be adequately addressed in spite of the partially shut dental services due to COVID-19 pandemic. In this time of change, where we are challenged to adapt to the delivery of dental care services to our patients, we need to utilize

insights from our study and base our decisions and strategy on the same. In the present circumstances it is recommended to follow standard triaging protocols, well prepare the dental operator, stringent infection control and waste management protocols. Rescheduling non-urgent appointments should be incorporated till the situation stabilizes in future.

More studies are needed on the effect of COVID-19 lockdown on dental patients to formulate a cumulative opinion on rendering services to the patients in case of any other pandemic of such scale. More guidelines need to be formulated for healthcare facilities so that these facilities should continue uninterrupted

Conclusion

In these unprecedented circumstances where COVID-19 pandemic has indiscriminately engulfed the world the outpatient healthcare model needs rebooting to prevent the disease from spreading further. In our study it was found that COVID-19 related lockdown drastically reduced the number of patients visiting the out-patient department of Dentistry in SHKM, GMC to about 90%. However, it was found the majority of the patients who visited the hospital seemed to be in a normal state of mind and without any associated fears. Patients were content over the treatment advised to them and understood the limitations of the management during the pandemic

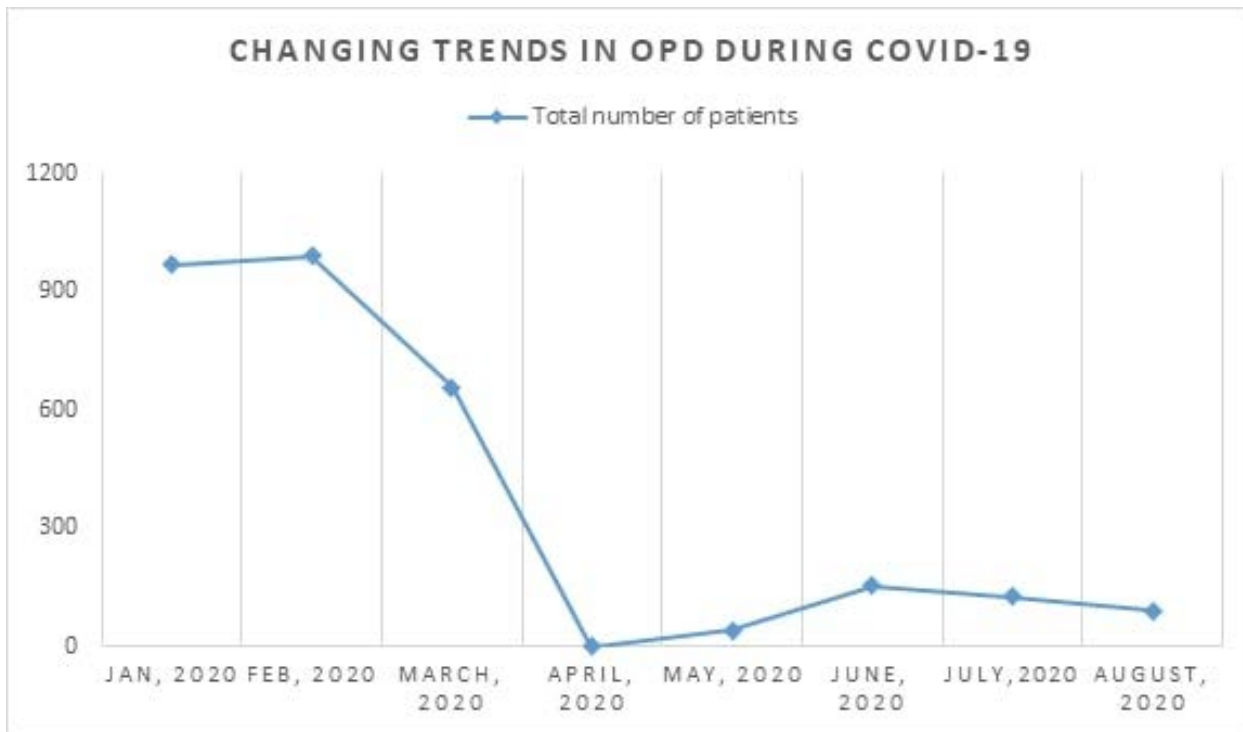
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Serial No.	Date:	
1) Demographic data		
Name:	Age/sex:	Occupation: self/Guardian
Address:		Phone no:
		Type of phone:
Zone: Red/Orange /Green		Apps on phone: whtsapp/ Aarogya setu
2) Family history:		
Family members:	Age of family members:	
Source of income:	No of earning members:	Dependents:
Current status of income/job:		
3) Medical history:		
a. Any history of hospitalization/ blood transfusion/ diabetes/ hypertension/ Under medication		
b. Any history of fever/cough/cold/difficulty in breathing:		
4) COVID Information:		
Q1. What do you know what covid-19?		
Q2. When and from where did you get the information about covid-19?		
Q3. Is there any covid positive member in your family, neighborhood or near by area?		
Q4. Any history of travelling in past one month?		
Q5. When was the last social gathering attended?		
Q6. How did you reach the hospital today? (transportation used)		
Q7. Did you take any precautions while coming to hospital? Mention if any.		
Q8. Attitude towards visiting hospital during covid:		
a. Normal b. Stresses/ tensed c. Out of compulsion d. Contented e. Doesn't matter		
Q9. If dental problem/ pain occurred during lockdown period: yes or no		
Q10. If yes, how did you managed?		
a. No treatment b. Self-medication- medication given prior by hospital/ Medication taken on someone's advice c. Home remedy d. Visited private dentist e. Any other		
5. Dental History:		
a. First visit/ Any Previous visit to SHKM:	Reasons for previous visit:	
b. History of past Illness:	Symptoms:	Treatment:
c. Reason for present visit:	Symptoms:	Duration:
Investigations done/ advised		
Present Treatment advised/ done		
* Informed consent from patient has been taken before filling form.		Name of the doctor

Figure 1



Graph 1