

Changes in Orthodontic Practice during Covid 19 Pandemic in Central India – A Questionnaire Study

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ABSTRACT

BACKGROUND

Due to ceased appointments, orthodontic emergencies like broken retainers, pricking wires, loose functional appliances, loss of appliances was seen. While handling the emergency cases the orthodontist should follow the guidelines provided by the government. Therefore, due to such reasons, it is important to study the impact of COVID - 19 on orthodontic practice. So, the aim is to study the changes in orthodontic practice during COVID 19 pandemic in central India.

METHODS

The study population used in the survey consisted of Orthodontists, Orthodontic residents, Dental practitioners in central India. A set of questionnaires was distributed through an online data collection platform (Google forms) between September to November 2020. The participants were reached through various social platforms. The participants were asked their opinion that whether the COVID - 19 will change the future practice in orthodontics.

RESULTS

According to the survey 62.8 % of practitioners continued their orthodontic practice during the lockdown period. 56.4 % of practitioners had undergone the COVID - 19 training program during the lockdown. To prevent the spread of disease and for the safety of staff and patients, 66.3 % of practitioners preferred teleconsultations. 75.3 % of practitioners used PPE kits for their personal and patient's safety while treating the patients in the dental clinic. Guidelines are given by World Health Organization (WHO) and Ministry of Health and Family Welfare (MoHFW) were followed by 36.2 % and 63.8 % dental clinics respectively.

CONCLUSIONS

As the world has become more aware and cautious about infection control, dental professionals need to prepare themselves and revise their practice with innovative ideas. A virtual treatment is emerging as a new modality in Orthodontic practice. The only way to combat this situation in crisis is following the strict sterilization protocol, reducing personal contact, and minimizing the amount of aerosol production.

Keywords:-COVID19; Orthodontics; Pandemic.

BACKGROUND

Covid - 19 is a highly infectious disease caused by a virus known as "Novel Coronavirus" (NCoV). It is believed that Bats and Pangolins are the natural hosts of Novel coronavirus. It is revealed that

the virus is similar to other viruses in the family such as Middle East Respiratory Syndrome (MERS).²

Transmission of the coronavirus in humans is mainly through respiratory secretions. The virus can also spread through the mucosal membrane of the oral cavity, nose, and eyes.³

COVID - 19 patients show symptoms like coughing, fever, respiratory tract infection, pneumonia, and loss of taste. These symptoms vary from person to person like one patient may show symptoms and the other may be asymptomatic. The target organ in COVID - 19 infection is the lungs. The mean incubation period of COVID - 19 is 6.1 days.⁴

This pandemic will have a direct and indirect effect on social as well as professional life.⁵ Dental professionals are also part of health care workers and have a high risk of getting infected. Due to this reason, there is a high negative impact on dental practice.⁶ Due to no prior notice of lockdown orthodontic appointments were temporarily ceased. Orthodontic treatment is not considered an emergency, but it should not be forgotten that regular check - ups and monthly appointments are important.⁷

Due to ceased appointments faced orthodontic emergencies like broken retainers, pricking wires, loose functional appliances, loss of appliances, and many more.⁸ There is also reported loss of control over different techniques. So to prevent and overcome the above situations only emergency cases should be handled in the clinic and the rest should be teleconsulted.⁹ While handling the emergency cases the orthodontist should follow the guidelines provided by the government such as the use of Personal protection equipment (PPE), N95 mask, proper ventilation, and strict sterilization and disinfection protocol according to guidelines.

Another situation that patients undergoing treatment or clinic staff are undergoing financial problems due to economic breakdown this prevents them from spending on non - essential things or non - emergency dental treatment.^{10,11}

Therefore, due to such reasons, it is important to study the impact of COVID - 19 on orthodontic practice.

METHOD

Selection Criteria

The study population used in the survey consisted of Orthodontists, Orthodontic residents, Dental practitioners in central India.

Study design

A self - designed closed - ended online questionnaire.

Study Duration

The data was collected between September 2020 to November 2020. A total of 312 filled questionnaires were reverted, and the data was assessed.

Data Collection

A set of questionnaires was distributed to 350 personnel through an online data collection platform (Google forms) between September to November 2020 among which 312 responded. The participants were reached through various platforms such as WhatsApp and Facebook groups of orthodontists and orthodontic residents. The participants were asked their opinion that whether the COVID - 19 will change the future practice in orthodontics. They were also asked how COVID - 19 changed the practice in orthodontics till now. They were also asked about the measures taken by the orthodontists in the orthodontic clinic.

Statistical Analysis

Statistical Package for Social Sciences {SPSS} for windows, Version 22.0, released 2013, IBM Corp, Armonk, NY, was used to perform statistical analysis.

RESULTS

The questionnaire was circulated among 350 orthodontists and general dental surgeons, among which 312 responded to the survey questions.

According to a survey, 62.8 % of practitioners continued their orthodontic practice during the lockdown period. 56.4 % of practitioners had undergone the COVID - 19 training program during the lockdown. To prevent the spread of disease and for the safety of staff and patients 66.3 % of practitioners preferred teleconsultation. 75.3 % of practitioners used PPE kits for their personal and patient's safety while treating the patients in the dental clinic.

If any patient was suspected with symptoms of COVID - 19 patient, then the response from different practitioners was different. 27 % of practitioners sent the patient back if the treatment was not an emergency kind of treatment. 51 % of practitioners referred the patient to medical practitioners for opinion and 21.1 % of practitioners treated the suspected patient having symptoms using a PPE kit.

Graph 1 shows the details about the management protocol followed in dental clinic during the lockdown period. Different clinics were operated with a different number of staff. 17.3 % clinics operated with 25 % staff, 40.4 % clinics operated with 50 % staff, 29.5 % clinics operated with 75 % of staff, and only 12.8 % clinics operated with 100 % staff.

Guidelines are given by World Health Organization (WHO) and Ministry of Health and Family Welfare (MoHFW) were followed by 36.2 % and 63.8 % dental clinics respectively.

On arrival of the patient to the clinic 9 % of clinics recorded travel history, 22.1 % of clinics recorded the body temperature, 18.3 % of clinics recorded the pulse oximetry readings and 50.6 % of clinics followed all the above - mentioned actions on patient arrival.

Graph 2 shows the details about sterilization and disinfection practices followed in the dental clinic. About 8 % of clinics used Hot air oven for sterilization, 37.2 % of clinics used autoclave, 15.1 % of clinics used ultrasonic cleaners, and 39.9 clinics used all the above methods mentioned. Sterilization and disinfection of non - critical instruments were done by different methods. 16.7 % clinics used 2 % glutaraldehyde, 34 % clinics used 0.01 % sodium hypochlorite, 20.8 % used spirit, and 28.5 % clinics used all the above methods for disinfection of non - critical instruments. For disinfection of clinic area, 43.3 % of clinics used sodium hypochlorite, 21.8 clinics used Lysol, 18.6 % clinics used phenol, and 16.3 % clinics used other methods.

Common problems observed during the follow - up were, 22.8 % pricking ends of orthodontic wires, 24.7 % broken retainers, 33.3 % broken band bracket appliance, 19.2 % loose functional appliance.

For disposal of waste from the dental clinic, 38.5 % of clinics handed waste to the municipal van, 16.7 % of clinics incinerated the waste, 31.4 clinics handed the waste for chemical treatment and 13.5 % of clinics used other methods. The frequency of changing masks was followed differently by different practitioners, 36.5 % of practitioners changed mask after every patient, 37.5 practitioners changed mask after every 2 hours and 26 % of practitioners used one mask per day.

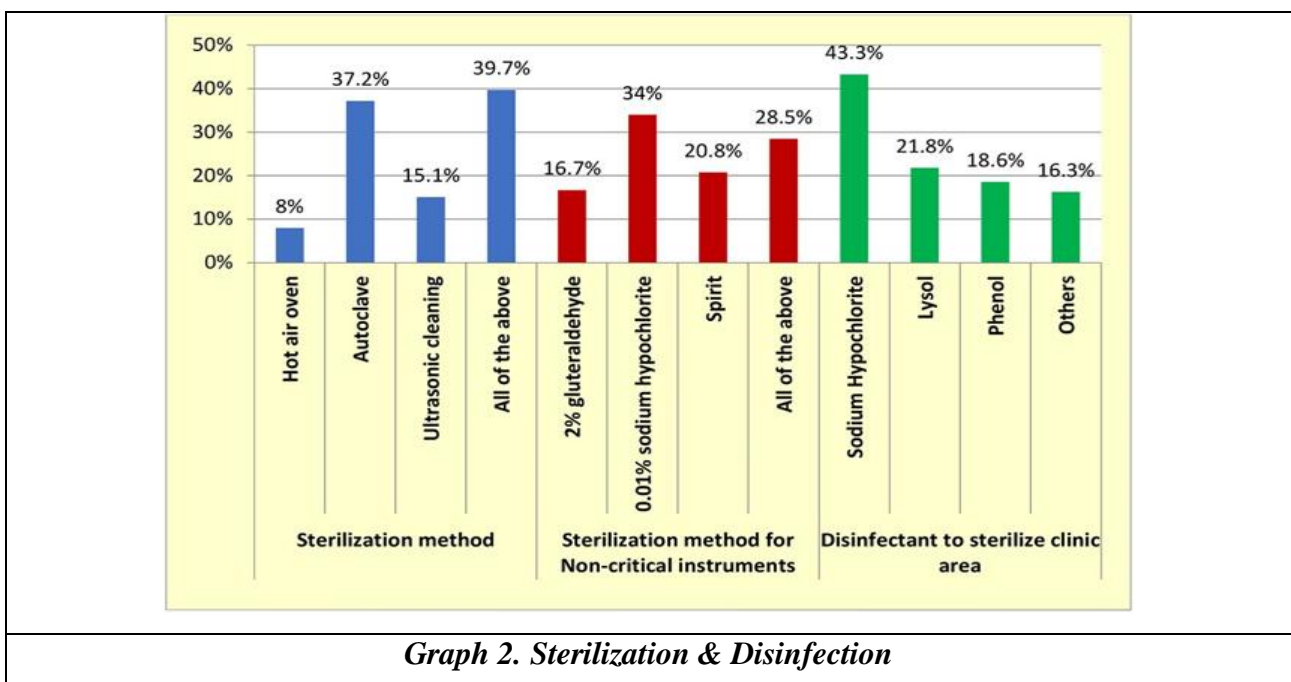
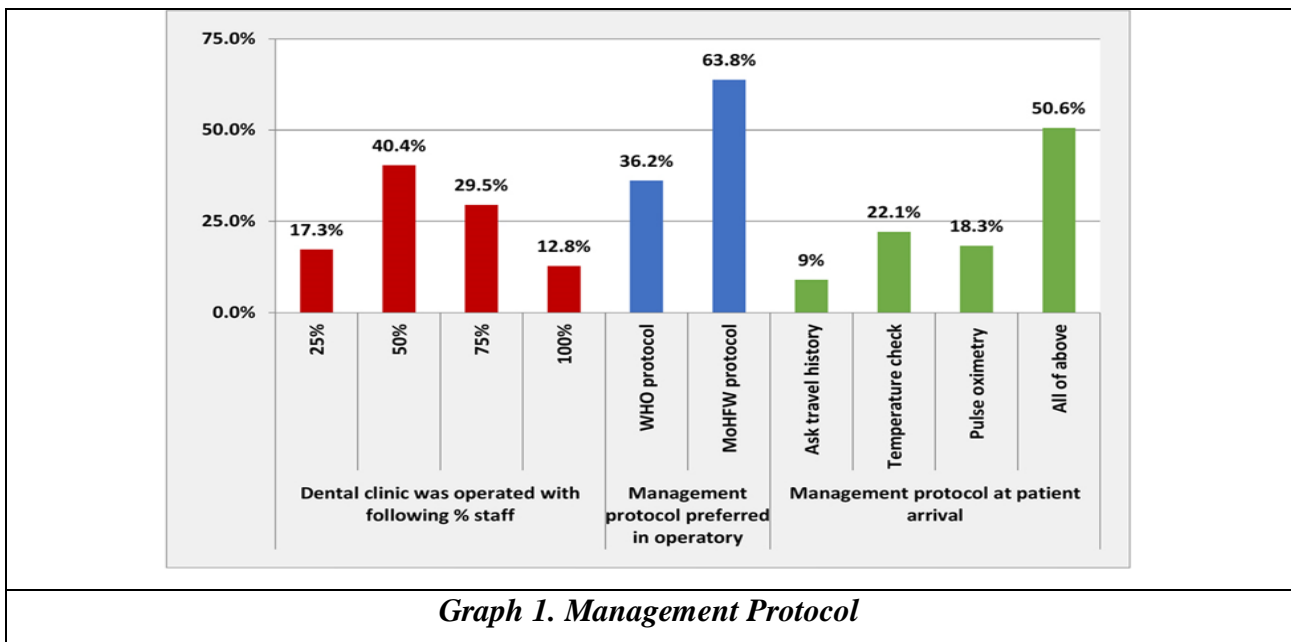
When the participants were asked about the COVID - 19 effect on Orthodontic practice, 80.8 % of participants agreed that COVID - 19 has changed the practice in Orthodontics and 68.6 % agreed that COVID - 19 will affect the viability of Orthodontics as a profession.

	Yes N (%)	No N (%)
Was your Orthodontic practice on during the Lockdown?	196 (62.8 %)	116 (37.2 %)
Did you undergo any training program regarding COVID - 19?	176 (56.4 %)	136 (43.6 %)
Do you prefer having Tele - communication?	207 (66.3 %)	105 (33.7 %)
Do you use PPE kit regularly during clinical practice?	235 (75.3 %)	77 (24.7 %)
Do you think COVID - 19 will affect viability of Orthodontics as profession?	214 (68.6 %)	98 (31.4 %)
Do you think COVID - 19 has changed the practice in Orthodontics?	252 (80.8 %)	60 (19.2 %)

Table 1. Changes in Orthodontic practice during COVID19.

	Frequency (n)	Percentage (%)
Send the patient if it's no emergency	87	27.9 %
Refer the patient to medical practitioner	159	51 %
Treating patients using PPE kit	66	21.1 %
Total	312	100 %

Table 2. What will you do if Patient is COVID19 Suspect?



DISCUSSION

The health care delivery system all over the world is affected by COVID 19 pandemic. This is more particular in dental care as there is more risk of exposure for both, that is the dentist and the patient.³ So, there is significant disruption in the dental health care delivery system all over the world. Along with general dental care, orthodontic care is also affected due to COVID 19 pandemic.⁴ It is important to get the perspective of general dental surgeons, Orthodontists, and Orthodontic postgraduate students as they are in the right position to answer the effect of COVID 19 on orthodontic practice.

Most of the participants have undergone previous training in infection control training during their under - graduation and post - graduation courses.² When the study was conducted, approximately 54.6 % of participants had already completed specific training on infection control in COVID 19 situation.

According to a study by Ikenna, almost 60 % of the participants thought that this pandemic would cause a reduction in the number of orthodontic patients in the future, whereas almost all the participants responded that it would affect their future Orthodontic practice.¹ It is interesting that in above 80.8 % of participants think that the COVID19 pandemic would change the Orthodontic practice. The major changes observed is increased infection control and increased use of personal protective equipment. In addition, participants have also practiced teleconsultation as recent studies have suggested teleconsultation in the COVID19 situation. The most common emergencies faced during the lockdown were broken band and bracket followed by broken retainers, pricking wires, and loose functional appliances. From an orthodontic perspective, orthodontic emergencies may include circumstances in relation to dental injury or condition in which the lack of management can harm the patient.^{6,7}

As there was lockdown throughout the country, different clinics were operated with different percentages of staff. Only 12.8 % of clinics operated with 100 % of staff. Keeping in mind that approximately half of the participants were orthodontics residents and most likely not engaged directly in orthodontic practice it is obvious that the impact of some situations would be less. Guidelines given by both the World Health Organization (WHO) and Ministry of Health and Family Welfare (MoHFW) were followed by 36.2 % and 63.8 % clinics respectively.

Almost 68.6 % of participants were worried about the viability of orthodontics as a profession. This perception may have derived due to high level of fear in public about this pandemic. This can be linked with the recession that may come along with the pandemic, which can reduce the payment capacity of the patients, especially in countries like India. Further studies are required to validate this.

The study has several limitations such as environmental differences that may affect the perception of impact. Furthermore, there is a different period of lockdown in different places according to the situation. However, the opinions recorded are more subjective and may differ from person to person depending on the circumstances and their experiences. However, the results of this study provide a base for future studies.

CONCLUSIONS

The people in India have learned and accepted to live with the novel COVID - 19 pandemic. As the world has become more aware and cautious about infection control, dental professionals need to prepare themselves and revise their practice with innovative ideas. A virtual treatment is emerging as a new modality in Orthodontic practice. The only way to combat this situation in crisis is following the strict sterilization protocol, reducing personal contact, and minimizing the amount of aerosol production.

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