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The impact of covid-19 pandemic on orthodontic practice in India: A questionnaire based study

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Abstract

Aim: The purpose of the present study was to evaluate the impact of covid-19 pandemic on the orthodontic practice in India.

Methodology: 75 orthodontists participated in the present research which was conducted in the questionnaire format. The questions were based on pre and post Covid pandemic influence over orthodontists and orthodontic practice in India. The data were subjected to descriptive statistical analysis-mean and standard deviation with p value ≤ 0.05 is significant.

Results; It was observed that the amount of patients dramatically reduced (92%) as compared to pre Covid era and the data was also statistically significant ($p=0.03$). orthodontists also faced that recalling old patients for follow up for the treatment continuation also took a hit (76%).

Conclusion: Orthodontic treatment should ensure only the management of a true emergency with the appropriate PPE, following the guidelines and protocols provided by the WHO and local authorities after effective Tele-screening and triage.

Keywords: COVID-19, orthodontics, patient education, tele-screening

Introduction

The corona virus belongs to the family of viruses found mainly in animals worldwide and has been reported to have affected humans in a place in Wuhan, Hubei Province, China in December 2019 where it was related to a local Huanan South China Seafood Market. COVID-19 has been named by WHO, and it also goes by a reference name called severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Symptoms of breathing difficulty, lung infection, fever and pneumonia were observed in patients in whom the virus had infested. Population have shown its resemblance to Severe Acute Respiratory Syndrome (SARS) and Middle East respiratory syndrome (MERS). The virus has a predilection for age, sex and pre-existing biological conditions or ailments ^[1]. Situations of quarantine are debatable and many differences in opinion prevail during these harsh times but the question arises about the safety of the others and the rights of the individual who are not infected but can be at a risk of infection and such factors also needs be stressed upon. Elective dental treatment needs to be postponed for a minimum of 3 weeks as directed by the American Dental Association (ADA) on 16th March 2020 and emergency treatment should be delivered on a priority basis. Treating a patient in person should be delayed as much because any patient can be a source of infection and can go undetected as the incubation period of the virus is 0-24 days. Health care workers should be equipped with the necessary screening and preventing measures for themselves as well as their respective staff members including their infection control measures ^[2]. The character of the virus' infectious route, with direct generation of airborne droplets in the form of aerosol, has revealed a great number of potential hazards impeding conventional and standard oral health care procedures ^[3]. It is nearly impossible to keep orthodontic practices completely aside. The Coronavirus Disease 2019 (COVID- 19) pandemic has had profound effects on orthodontic care delivery worldwide ^[4]. Considering the generation of copious amounts of droplets along with the aerosols formed during routine dental procedures, the conventional protective measures routinely followed by dental clinicians are unfortunately no longer efficient for prevention of COVID-19 transmission ^[5].

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According to a report by the New York Times, dental clinicians have the highest risk of exposure, even higher than that of nurses, physicians and pharmacists [6]. Under such situations, dental management of patients requires unusual and distinctive precautions, which have not been practiced or preached before [7]. The pandemic has led to a drastic change in the work environment for orthodontists and it is the need of the hour to adapt to the change, adopt the newer protocols, and be adept in the same. The current and impending economic losses could be attributed to accentuated expenditure and the lack of resources to fulfil them. Despite being shut, clinics need to bear recurrent disbursement including salaries to the staff, EMI for equipment, monthly rent and bills including those of biomedical waste management, water, electricity, phone and internet, and for consumables.

Aim of the present study

The aim of this present study is to provide a comprehensive compendium of the implications and complications of SARS-CoV-2 and COVID-19 on orthodontic treatment and to discuss the contingency management and delivering emergency orthodontic care in India.

Methodology

75 orthodontists were enrolled for the present research, which consisted of 15 female and rest were male participants. Out of 75, 25 orthodontists were in practice for more than 5 years. The study was conducted in a questionnaire format (Table 1) which was formulated in an open-ended format and in English language. The questions were based on pre and post Covid pandemic influence over orthodontists and orthodontic practice in India. The questionnaire was sent by emails to the participants. Participants who failed to respond or replied with incomplete responses, were not included in the study. The responses received were recorded in MS excel sheet and the data were subjected to descriptive statistical analysis-mean and standard deviation with p value ≤ 0.05 is significant.

Table 1: Questionnaire used in the study

S. No.	Questions
1.	Has the number of patients reduced due to pandemic?
2.	Has patient recall has taken a blow when compared to time before pandemic?
3.	Have you experienced changes in sterilization procedures?
4.	Have you experienced financial constraints due to pandemic?
5.	Are you practicing more of video consult or one on one patient first time consultations?
6.	How are you reducing the aerosol spread in the orthodontic procedures during your treatment procedures?
7.	Have you experienced differences in waste management during pandemic times?
8.	How has patient record keeping changed during this pandemic?
9.	Do you have to educate the patient more as compared to pre-Covid times?

Results

It was observed that the amount of patients dramatically reduced (92%) as compared to pre Covid era and the data was also statistically significant ($p=0.03$). orthodontists also faced that recalling old patients for follow up for the treatment continuation also took a hit (76%). Around 33% of orthodontists preferred video consult for new patients. Waste management however did not change much for the participants. During the Covid era, electronic record keeping

became much more prevalent (34%). It was imperative that aerosol generating procedures were kept to minimum to lessen the spread infection in the orthodontic practice like self-etching primer usage (43%). (Table 2)

Type 2: Data obtained from the participants

S. No.	Questions	Percentage analysis	Mean± SD	p value
1.	Patient number	Reduced (92%)	1.38±0.56	0.03
2.	Recall of patient	Troublesome (76%)	1.11±0.33	0.0211
3.	Changes in sterilization	Yes (78%), No (22%)	1.67±0.11	0.32
4.	Financial constraints	Financial issue (48%)	2.33±1.11	0.98
5.	Video/one-to-one consult	Video consult (33%), one-to one consult (67%)	1.022±0.11	0.44
6.	Reducing the aerosol generating procedure	Self-etching primer (43%), conventional (57%)	1.5±1.7	1.53
7.	Waste management	Cumbersome (15%)	0.88±0.27	1.09
8.	Patient record keeping	Electronic record keeping (34%)	2.31±1.56	2.56
9.	Patient education	Affected (11%)	2.11±0.99	2.11

Discussion

The dental practice and orthodontic care during the pandemic and future practice will require precautionary and selective case evaluation based on the practitioner's judgment to reduce cross-contamination and prevent new outbreaks. The clinician should follow the guidelines provided by the concerned health regulatory authorities. Modification and redesign of the dental clinic might be required to maintain efficient air circulation and ventilation and appropriate standard PPE. Effective telescreens and triaging should be part of a routine clinical screening protocol until the uncertainty of the COVID-19 pandemic subsides. Any suspected patient with signs and symptoms of COVID-19 should require deferred orthodontic care and a referral to the COVID-19 screening unit as a priority. The dental treatment should be minimally invasive, of minimal contact, and avoid aerosols generation. The COVID-19 pandemic has markedly influenced all dental health professionals and orthodontists. There is increased requirement and demand for clinical inventory leading to increased practice costs. Nevertheless, orthodontists and dental practitioners should maintain a balance between a level of care and the cost involved. Patients should be well informed with the changed norms of infection control measures and the cost factors [8]. The clinic disinfection protocols during pre-treatment, during treatment, and post treatment should be strictly followed. The staff and patients' well-being should be given maximum priority. The proposed workflow and guidelines collected from various health regulatory authorities in the article will provide appropriate and effective management of dental and orthodontic care during the COVID-19 pandemic and post-COVID practice. Virtual examination is a feasible alternative to conventional examinations technique, however identifying and developing a patient friendly platform is most required when carrying out initiatives. Through virtual examination of a patient the x-rays and images can also be assessed for reference if they are prior fed on to a data base system and are handy for an orthodontist to access when the need be [9]. Certain conditions cannot be avoided as it is going to hamper the process of mastication and may lead to food lodgement followed by chewing difficulties. Such situations cannot be attended by the orthodontist especially if it concerns him/her to visit far off places for orthodontic consultations. Hence those problems require immediate intervention by a locally situated general

dental practitioners (GDP) ^[10]. It is at the discretion of the GDP to attend such emergencies if there is a provision for allowing the GDP to see a patient by the government or regulating health authorities.

Conclusion

During a pandemic emergency, orthodontic treatment should ensure only the management of a true emergency with the appropriate PPE, following the guidelines and protocols provided by the WHO and local authorities after effective tele screening and triage. Orthodontic practice and patient management must adapt to changes and maintain a balance between service and social needs.

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