

## **Evaluation of Oral Health among Young Patients during Covid 19- An Original Research**

**Dr. Jyoti Paliwal<sup>1</sup>, Dr. Harisha Dewan<sup>2</sup>, Dr. Bhavna Malik<sup>3</sup>, Dr. Vijay Kumar S<sup>4</sup>, Dr. Sunil Kumar Gulia<sup>5</sup>, Dr. Maimoona Abdul Khader<sup>6</sup>**

<sup>1</sup>Professor and Head, Dept of Prosthodontics and Crown and bridge, RUHS College of Dental Sciences, Jaipur. [jyotishubh@yahoo.com](mailto:jyotishubh@yahoo.com)

<sup>2</sup>MDS, Assistant Professor, Department of Prosthetic Dental Sciences, College of Dentistry, Jazan University, Jazan 45142 KSA. [harisha.dewan@yahoo.com](mailto:harisha.dewan@yahoo.com)

<sup>3</sup>Assistant professor, Oral and Maxillofacial Surgeon, Department of Dentistry, Shri Guru Ram Rai Institute of Medical and Health Sciences and Shri Mahant Indires Hospital, Dehradun, Uttarakhand, India. [sgrrimcdental@gmail.com](mailto:sgrrimcdental@gmail.com)

<sup>4</sup>Reader, Department of Public Health Dentistry, Amrita School of Dentistry, Amrita Vishwa Vidyapeetham, Cochin, Kerala. [vijaytvp24@gmail.com](mailto:vijaytvp24@gmail.com)

<sup>5</sup>Senior Lecturer, Oral and maxillofacial Surgery, SGT University, Gurugram, Badli, Haryana. [djgulia10@gmail.com](mailto:djgulia10@gmail.com)

<sup>6</sup>Senior lecturer, Dept of Orthodontics, Educare institute of dental science, Chattiparambu, Malappuram. [drmainoo@gmail.com](mailto:drmainoo@gmail.com)

### **Corresponding Author:**

Dr. Jyoti Paliwal, Professor and Head, Dept of Prosthodontics and Crown and bridge, RUHS College of Dental Sciences, Jaipur. [jyotishubh@yahoo.com](mailto:jyotishubh@yahoo.com)

### **ABSTRACT**

*Introduction:* Dental issues in the young patients impact the families, and the health care system. Utilizing fluoride varnishes, pit and fissure restorations may prevent caries. However there may be a shift in the dental health in the COVID-19 times among the young children. Hence in present study we evaluate the oral health among young patients during COVID 19.

*Methods:* We compared the preventive oral health measures before and after COVID among the pediatric patients of age 1-15 years. The study was conducted by comparing the treatment like fluoride application, pit and fissure sealants before and after COVID-19. Appropriate statistical tools were applied to compare the observations keeping the significance value at 0.05.

*Results:* We observed that fluoride applications and the pit and fissure restorations were significantly reduced during the COVID-19. DMFT score increased but not significantly. Number of the pediatric visits for the dental treatment before and after the COVID-19 also decreased but not significantly.

*Conclusions:* It was observed that the pandemic has affected the dental health of the young patients. Appropriate measures be taken to improve the health of the children.

*Keywords:* DMFT, Dental health, young, COVID-19.

## INTRODUCTION

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) causes Coronavirus disease 2019 (COVID-19).<sup>1</sup> COVID -19 was declared a public health emergency by WHO.<sup>2</sup> The routes of transmission of COVID -19 are through direct and contact transmission. Pediatric population are also at high risk of getting the disease due to various reasons and may show various levels of presentations. The Early childhood caries is commonly seen in the young patients. The gold standard in the pediatric dentistry is Prevention of oral health, which has become more significant during this time of pandemic and a Public Health Emergency. Periodic check-up and dental health education helps in the establishment of the oral health in children. Due to the pandemic of the COVID-19 many dentists have restricted the dental treatments to only emergencies. The same trend has been followed in various countries.<sup>3,4</sup> However till a further protocol of treatments is given by the WHO, the dental check-ups should be focused on the prevention of disease, through education, interventions that are minimally invasive or noninvasive.<sup>3-6</sup> After the pandemic the tele-consultation services have gained much importance and this trend is being more appreciated by both the public and practitioners. Hence it is at such times that the efficient management is important of the oral health among the children. The key objective is to prevent the disease spread and the cross-infections while attending the need for the treatment. Hence in the present study we intend to compare the before and after COVID-19 changes in the dental visits of the young patients.

## MATERIALS AND METHODS

The present study was conducted at three different dental colleges across the state. The study was conducted for a period of 6 months. The period before March-2020 was considered as normal and from April-2020 was considered as pandemic. We collected the data from the institutional records before pandemic for 6 months and after the pandemic from August 2020 to February 2021 as the post pandemic time.

After procuring the ethics clearance, we conducted a retrospective study. A total of 2264 participants were included in the study. Only those patients with no other medical conditions or special needs were included in the study. The DMFT scores that were obtained from the previous records were noted on the excel sheet. The number of the patients for whom the Fluoride application, pit and fissure sealants applied were noted. The statistical analysis by Wilcoxon Mann-Whitney tests was done and the  $p < 0.05$  was considered as significant.

## RESULTS

We observed that the fluoride application rate at dental visits significantly lowered ( $p < 0.001$ ). We also observed that there was a significant decrease in the application of the pit and fissure restoration after the pandemic. ( $p < 0.001$ ). The DMFT score was observed to have increased in the post COVID time than before. However it was not significant. There was a generalized decrease in the attendance to the department for the treatments and also for the invasive procedures we noted a decrease in the number. Table 1

Table 1: Comparison of various parameters noted before and after the COVID-19.

Variable	Before COVID-19	After COVID-19	p
Fluoride	1200	680	<0.05
Pit and fissure	624	230	<0.05
DMFT	1275	1320	NS
Total number of patients attending the department	1308	956	NS

## DISCUSSION

In the pandemic of the COVID-19, the focus has shifted to the consultations only. The necessities to formulate the criteria to prioritize the procedures that need to be done in the safety of the clinic have to be verbalized. Priority should be given to prevention of the disease. In the present study the following steps were taken. All safety protocols were followed. We did a institutional retrospective study.<sup>7</sup> An early and continuous association with parents has given an encouraging oral health outcome and denotes the first interventions a dentist does.<sup>8</sup> The observations of this study show the significance of general dentist for the preventive oral health care during the first wave of the pandemic. We observed a significant decrease in fluoride application rate at dental visits. Similar observations were made in the study of Whaley et al<sup>9</sup> where they also noted a decrease in the post COVID visits. When specialist dental clinics were closed for emergency care during the COVID-19, general dentists continued to provide preventive oral health care, for young children. Across the United States, only 8% of young children receive preventive oral health services at medical well-child visits.<sup>10</sup> We also observed a significant decrease in the pit and fissure restorations after the COVID-19. The application of the fluoride and the pit and fissure restorations are established with the lower incidence of the caries in the previous studies.<sup>18-22</sup> Contaminated aerosols and splatter are an important potential mode of transmission for many pathogens including SARS-CoV-2.<sup>14,15</sup> Many of the restorative procedures produce aerosols. The decrease in the restorative procedures observed in our study could be due to fear of the contagion. For aerosol-generating procedures, which mainly involved the use of water-cooled contra-angle handpieces, it was mandatory to use four-handed dentistry and assistant-held high volume suction, proven measures to reduce contamination.<sup>16</sup>

We observed that the number of the patients attending the dental clinics decreased after the pandemic. We noted that there was a sharp fall in the visit to the dentist during March- April 2020. However after December the number of the patients attending increased dramatically. In the study of Guo et al<sup>10</sup> they also observed a decrease in the attendance of the patients to the dental clinic for various emergencies during the pandemic. In the previous studies the similar observations to our study were made with respect to the number of the patients attending the clinic. This could be attributed to the fear of the contagion. Also due to lock down that may have impacted the transport. There was also a decrease in the number of the patients referred for the trauma, due to the closing down of schools and also the contact sports. There was observed an increase in the DMFT score after the pandemic that could be explained by the inaccessibility of the dental services during the pandemic. However there was no significant increase.

A recent study, based on representative US survey data, reported that 46.7% of US adults delayed going to the dentist or receiving dental care owing to the COVID-19 pandemic.<sup>11</sup> The

present retrospective study, likewise, suggests that the pandemic led a segment of the population to delay dental care in spite of an urgent treatment need.<sup>12,13</sup> Therefore, as long as restrictions are imposed on dental healthcare providers, it is important to identify patients to whom suspended or deferred care presents a likely health risk and to arrange timely follow-ups.<sup>16,17</sup>

This retrospective study has some limitations that need consideration. First, the dataset contained no information on SARS-CoV-2 infections among those who attended the departments. Subsequently, this study precludes any conclusion about the impact of the precaution measures regarding cross-infections at the dental emergency service. Second, the retrospective study examined data from a only dental colleges. These finding may not be generalized to the entire populations across various socioeconomic status.

## CONCLUSION

It is evident from the study that the pandemic has affected the dental health as well as the general health and well being of the young children. Measures have to take to improve the accessibility to dental clinics and the oral health of the young patients while following the COVID-19 protocol.

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