

# COVID-19 Third Wave: A Concern for Pediatric Dentists?

Gauri Kalra<sup>1</sup>, Vijay P Mathur<sup>2</sup>

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Coronavirus disease-2019 (COVID-19) was declared a pandemic on March 11, 2020, and a public health emergency by the World Health Organization (WHO).<sup>1</sup> Since then, South Asian countries have witnessed at least two waves of the disease with variable intensity. Within about 13 months of start, i.e., April 10, 2021, India became the country with the third-highest number of cases affected with coronavirus disease.<sup>2</sup> Since the beginning of the pandemic, healthcare professionals had been working at the forefront in the fight against COVID-19 across the globe with great ardor and devotion. The initial understanding about the coronavirus spread was through droplet contamination, and responding to it as a threat, dental professionals had been projected at the highest risk of getting infected. The reason for this was aerosols by the dental turbine and ultrasonic devices during dental procedures which are likely to facilitate virus transmission. As a panic reaction, initially, all dental practices (private and government) were suspended in several countries, including the UK.<sup>3</sup> An article published in "The New York Times" titled "The Workers Who Face the Greatest Coronavirus Risk" concluded about dentists being more at risk than general practitioners and nurses in contracting coronavirus disease.<sup>4</sup> This also initially created panic around the world among dental and medical professionals. Hence, with a novel coronavirus and no vaccine/drug availability to combat the disease, personal protective equipment (PPE) was thought to be the only option for use by health workers while treating the infected patients. With the apprehension of getting infected, excessive numbers of PPEs were used creating a fear of severe shortage. The closures of dental facilities and routine medical outpatients further led to increased levels of COVID-19-related fear and anxiety among dental professionals.<sup>5</sup>

The imposition of worldwide lockdown could bring down the speed of spread to some extent. Meanwhile, various pharmaceutical firms and Govt organizations also developed vaccines and started coverage of dental professionals. The initiation of vaccine clinical trials was, however, able to downgrade the anxiety and dental practices could restart in some regions. Since the middle of March 2021, the second wave of the pandemic started in Asia with a mutated virus causing a higher intensity life-threatening infection affecting the younger age-group (25–60 years). As per the recent data (WHO) as of July 30, 2021, COVID-19 has been found to have affected 47 African countries, 15 Western Pacific countries, 53 countries in Europe, 10 countries in Southeast Asia, 21 countries in the Eastern Mediterranean region, and 35 countries in the region of Americas with a total of 196,553,009 million laboratory-confirmed cases, about 4,200,412 million deaths.<sup>6</sup>

Data describing COVID-19-infected children in South Asia is limited; however, a study that included 260 critical pediatric cases from the hospitals in seven countries (China, Japan, Singapore, Malaysia, Indonesia, India, and Pakistan) concluded about 40% of children were asymptomatic and the overall mortality rate

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<sup>1</sup>Division of Pedodontics and Preventive Dentistry, Centre for Dental Education and Research, All India Institute of Medical Sciences, WHO Collaborating Centre for Oral Health, New Delhi, India

<sup>2</sup>Department of Pedodontics, Sardar Patel Post Graduate Institute of Dental and Medical Sciences, Lucknow, Uttar Pradesh, India

**Corresponding Author:** Vijay P Mathur, Department of Pedodontics, Sardar Patel Post Graduate Institute of Dental and Medical Sciences, Lucknow, Uttar Pradesh, India, Phone: +91 9811955553, e-mail: vijaymathur7@yahoo.com

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recorded was 2.3%, mainly from India and Pakistan.<sup>7</sup> Moreover, the recent serosurvey (December 2020, January 2021) showed that the percentage of children infected with coronavirus disease was around 25%, the same as adults in the age-group of 10–17 years in the Indian subcontinent.<sup>8</sup> Recently, speculations have arisen suggesting the possibility of a third wave to affect the Southeast Asian region which might involve the below 18 years age-group who have not been given a vaccine. However, the existing literature suggests that children did not have severe symptoms, and there is a likelihood that they may act as potential carriers of the disease. Some of the countries have started vaccinations and vaccine trials for children, although, such trials require time to prove efficacy on this group. To our knowledge, Maldives is the only country in the South Asian subcontinent that is providing Pfizer/BioNTech vaccine to older (13–18 years) children.<sup>9</sup>

Treating children requires effective communication between pediatric dentists and children through facial expressions. If the pediatric dentist is in PPE, the face is not visible and the likelihood of having effective communication with the child reduces. This may further lead to anxiety in the child and difficulty in rendering treatment. After >1 year of the COVID pandemic and ample literature about its spread, there is a state of dilemma in treating child patients.

The Indian Academy of Pediatrics (IAP)<sup>8</sup> and UNICEF South Asia<sup>9</sup> have documented severe complications like COVID pneumonia and "Multi-system inflammatory syndrome" (MIS-C) in children due to immune dysregulation with a lower incidence of 12 cases per 100,000 populations. An MIS-C is a rare disorder involving multiple organs such as the heart, lungs, kidneys, brain, skin, eyes, or gastrointestinal organs which may lead to multisystem failure, shock, and death in severe cases. Indian Academy of Pediatrics further suggests that most children suffering from MIS-C are less

likely to transmit the infection to others. Nevertheless, IAP has devised strict guidelines on COVID management in children by sensitizing the pediatricians and training them to curb the third wave.

Similarly, as pediatric dentists, it is time to prepare ourselves for providing as many consultations and effective dental treatment to young children during the conjectured third wave of the pandemic. This must include parental education regarding the illness, warning signs/symptoms of the disease, and emergency dental needs during the situation. Preventive behavior of social distancing, mask etiquettes, and hand hygiene should be implemented strictly. Virtual assistance and video or tele-pediatric dentistry may prove to be an effective strategy in augmenting the preparedness of pediatric dentists during the anticipated third pandemic wave.<sup>10</sup> Ministry of Health, Malaysia has also efficiently devised pediatric dental practice guidelines suggesting their preparedness to tackle dental situations emerging during the various waves in the pandemic involving children by including the application of recent devices such as room disinfection using UV light disinfection device and aerosol reduction equipment, negative pressure rooms with air either exhausted to the exterior or HEPA filtered recirculation, if required.<sup>11</sup> Incorporation of such protective equipment allows for a shorter fallow period (the time required to clear the infectious aerosols is generally 60 minutes) preventing cross-infection. In addition, during the active second wave (May 2020) in Thailand, the Department of Medical Services, Ministry of Public Health issued a joint guideline for dental practices during the pandemic, together with the Thai Dental Council, to prioritize dental treatment with urgency under strict infection control.<sup>12</sup> The intensity and timing of the third wave are still unpredictable amidst the ongoing clinical vaccine trials for children and evolving preventive protocols. Additionally, evidence and clinical research suggest that because of variable exposure and host factors, the chance of cross-infectivity from pediatric patients is likely to be unexpected. If the children are kept at home and have fewer opportunities to meet infected or exposed people, it will decrease the chances of cross-infection between children also. Moreover, as evidence has been established pertaining to the angiotensin-converting enzyme II (ACE2) receptors which the SARS-CoV virus uses to attach themselves to the human body are less in numbers in younger children compared with adults. Another reason cited for the same had been that children often experience respiratory infections [e.g., respiratory syncytial virus (RSV)] in the winter season, so they may be present with higher antibodies against influenza viruses than adults. Furthermore, the immune system in children is still maturing and may behave differently from that of adults.<sup>13</sup> Such reports and evidences may aid in allaying the burden and anxiety of treating pediatric dental patients in the coming months pertaining to exclusive pediatric dental practice. The dental professionals treating children must place more emphasis on preventive and minimally invasive dentistry (MID) and rigorous infection control strategies. Besides being less traumatic, MID is considered a low-risk aerosol-producing treatment modality. During minimally invasive procedures, there is a reduced need for local anesthetic use and obviously less chance of natural aerosols generation by children during crying, coughing, etc.<sup>14</sup> The MID approach includes procedures like preventive sealant

application, hand excavation of dentinal caries (ART), silver diamine fluoride (SDF) application, fluoride varnish application, and Hall technique of crown placement.

With time and the behavior of the coronavirus, it could be understood that this disease would not disappear suddenly and would keep affecting different populations of different age-groups. This may continue until complete vaccination status or herd immunity is achieved in society. Therefore, speculations of the third wave of this pandemic affecting children may not be considered fearful, if we, as pediatric dentists are fully prepared to treat the younger population with effective infection control policies and advanced minimally invasive procedures.

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