

# Knowledge and Perception of COVID-19 among Pedodontists in India: A Quick Online Cross-sectional Study

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## ABSTRACT

**Introduction:** The coronavirus disease 2019 (COVID-19) epidemic began in Wuhan, China, in December 2019 on January 1, 2020. For dental practices and hospitals in countries/regions that are (potentially) affected with COVID-19, strict and effective infection control protocols are urgently needed.

**Aim and objective:** To investigate knowledge and perception of COVID-19 among pedodontists in India.

**Population and methods:** A quick online cross-sectional study was conducted among 335 pedodontists in India. The questionnaire was sent to 410 pedodontists in India, out of those 335 responded. The study objective and questionnaire were sent to pedodontists via "Google Forms". The collected data were sent for appropriate statistics.

**Results:** Of the total participants, 82% of pedodontists think that children are silent carriers of COVID-19. Sixty-two percent of pedodontists say that it is very difficult to treat pediatric dental patients by use of a personal protective equipment (PPE) kit. Sixty-four percent of pedodontists will overcome this financial crisis by increasing working time and 36% of them by increasing the cost of treatment.

**Conclusion:** The role of pedodontists in preventing the transmission of COVID-19 is critically important. Pedodontists' role in the prevention of COVID-19 is crucial.

**Keywords:** Coronavirus disease 2019, Pandemic, Pedodontists.

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## INTRODUCTION

The coronavirus disease 2019 (COVID-19) epidemic began in Wuhan, China, in December 2019 on January 1, 2020.<sup>1</sup> On January 8, 2020, a novel coronavirus was officially announced as the causative pathogen of COVID-19 by the Chinese Center for Disease Control and Prevention. For dental practices and hospitals in countries/regions that are (potentially) affected with COVID-19, strict and effective infection control protocols are urgently needed.<sup>2</sup>

The virus is transmitted mainly via respiratory droplets and/or contact, and human-to-human transmission and family clustering have been reported. The youngest patient confirmed with 2019-nCoV infection was only 1 month old.<sup>3</sup> Other viruses from the same family include the severe acute respiratory syndrome coronavirus (SARS-CoV), which appeared in 2002, and Middle East respiratory syndrome coronavirus (MERS-CoV), which was reported in 2012. The incubation period of the virus was initially thought to be 14 days, multiple cases have been reported with shorter timelines.<sup>4</sup>

Rapid transmission of the disease and an exponential increase in the number of confirmed cases coupled with evolving but limited information about the transmission, prevention, diagnosis, treatment, and prognosis of the disease have caused much anxiety and confusion in the community and affected the delivery of vital healthcare services, including dental treatments for those who need emergency care. As dental professionals treating emergency patients in the time of uncertainty in the midst of the COVID-19 pandemic, it is urgent that we develop an adequate understanding of the disease, especially its modes of transmission, and adopt prudent measures to protect our patients and our staff to the best of our capacity.<sup>5</sup>

To help prevent the transmission of all respiratory infections, pediatric dental practices should adhere to infection control measures and protocols. Offices have to also follow routine cleaning

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and disinfection strategies used during flu season all the time.<sup>6</sup> The use of personal protective equipment (PPE) such as gloves, masks, visors, goggles, dental uniform, surgical gown, and shoes are must for pediatric dentists.<sup>7</sup>

The first case of a dentist being tested positive for COVID-19 was reported on January 23, 2020, at the Department of Preventive Dentistry in the Wuhan University Dental Hospital.<sup>8</sup> Dental patients may cough or sneeze during treatment and their salivary (and possibly blood) secretions can become aerosolized during the use of ultrasonic instruments or high-speed handpieces. Dental instruments may become contaminated or be exposed and these infected instruments can cause infections through puncture or direct contact with mucous membranes and hands.<sup>9</sup> The symptoms of pregnant women with COVID-19 pneumonia are diverse, with the

main symptoms being fever and cough. No evidence for vertical transmission in late pregnancy.<sup>10</sup>

The WHO also initiated several online training sessions and materials on COVID-19 in various languages to strengthen preventive strategies, including raising awareness and training.<sup>11</sup> Upon patient arrival in dental practice, patients should complete detailed medical history.<sup>12</sup> In dental settings, oral fluids from the patient or contaminated dental instruments or environmental surfaces create a potential way of spreading the virus to the operators and other patients. Standard dental procedures that include the use of rotating instruments such as the high-speed turbine handpiece and the use of scalers for oral hygiene are associated with the generation of large quantities of aerosols and droplets from the saliva and blood of the patient.<sup>13</sup>

Emergency dental care was provided with advice on strict personal protection and measures to reduce and avoid the production of droplets and aerosols, use of high-volume aspiration, and others, as had been recommended during the earlier severe acute respiratory syndrome outbreak.<sup>14</sup> Lessons learned from the severe acute respiratory syndrome outbreak in 2003 suggest that knowledge and attitudes toward infectious diseases are associated with the level of panic emotion among the population, which can further complicate attempts to prevent the spread of the disease.<sup>15</sup>

Hence, the current study was carried out to investigate the perception and knowledge of pedodontists toward the COVID-19 pandemic in India.

### POPULATION AND METHODS

A quick online cross-sectional study was conducted among 335 pedodontists in India with approval sought from IEC. The questionnaire was sent to 410 pedodontists in India, out of those 335 responded. The study objective and questionnaire were sent to pedodontists via "Google Forms". A questionnaire was prepared and validated. The closed-ended questions were sent to participants to collect responses. There was active participation from all the pedodontists. Data were obtained from the participants using a semi-structured self-administered and validated questionnaire which included details on knowledge, attitude, and practice toward the COVID-19 pandemic in India (Tables 1 and 2).

### STATISTICAL ANALYSIS

Statistical analysis was done by using descriptive statistics using frequency and percentages and software used in the analysis was SPSS 22.0 version. A Chi-square test was employed. *p* value (<0.05) was considered statistically significant.

### RESULTS

Of the total participants, 82% of pedodontists think that children are silent carriers of COVID-19. According to most pedodontists, the central government should provide proper guidelines regarding the COVID-19. With available information accessibility, 43% of pedodontists are just confident in carrying dental treatments in the COVID-19 pandemic in India. Forty-eight of pedodontists like to use 99% of bacterial filtration efficiency and particulate filtration mouth mask while dealing with dental treatments in the COVID-19 pandemic in India. Seventy percent of pedodontists think that level 3 masks should be used while using airoter/ultrasonic scaler (Table 1).

**Table 1:** Questionnaire used and responses obtained

S. no.	Questions	Options	Frequency (n)	Percentage
1	Do you think that the children are silent carrier?	Yes	276	82.39
		No	59	17.61
2	According to you who should dispense proper guidelines regarding COVID-19 pandemic?	Central Government	149	44.48
		State Government	32	9.55
		Dental Council of India	136	40.60
		Indian Dental Association	6	1.79
		Indian Society of Pedodontic and Preventive Dentistry	12	3.58
3	With available information accessibility how confident are you to handle COVID-19 pandemic?	Confident	144	42.99
		Very confident	35	10.45
		Less confident	130	38.81
		Not confident	26	7.79
4	What type of mask you prefer during COVID-19 pandemic?	95% of bacterial filtration efficiency and particulate filtration	115	34.33
		97% of bacterial filtration efficiency and particulate filtration	42	12.54
		99% of bacterial filtration efficiency and particulate filtration	162	48.36
		91% of bacterial filtration efficiency and particulate filtration	16	4.78
5	What type of mask you prefer while using ultrasonic scaler/airoter?	Level 1 mask	40	11.94
		Level 2 mask	60	17.91
		Level 3 mask	235	70.15

Disposable masks with rubber bands are preferred by 56% of pedodontists. Of the total of pedodontists, 63% of them like to treat patients by using a PPE kit. Sixty-two percent of pedodontists say that it is very difficult to treat pediatric dental patients by use of a PPE kit, i.e., not comfortable. According to 56% of pedodontists, pediatric patients become negative, i.e., the behavior becomes uncooperative. Ninety-two percent of pedodontists sanitize their working area. Eighty-nine percent of pedodontists in India are

**Table 2:** Questionnaire used and responses obtained

S. no.	Questions	Options	Frequency (n)	Percentage
1	Which type of masks you like to prefer during COVID-19 pandemic?	Disposable with rubber bands	189	56.42
		Disposable with long ties	98	29.25
		Washable and reusable	48	14.33
2	Do you like to treat child patients by wearing PPE kit?	Yes	212	63.28
		No	123	36.72
3	What do you think about comfort of PPE kit?	Comfortable	46	13.73
		Not comfortable	74	22.09
		Reduces working efficiency	208	62.09
		Increases working efficiency	7	2.09
4	What do you think about child co-operation after wearing PPE kit?	Positive	31	9.25
		Definitely positive	24	7.16
		Definitely negative	93	27.76
		Negative	187	55.82
5	Do you sanitize your working area?	Yes	308	91.64
		No	27	8.06
6	Are you affected financially by COVID-19 pandemic?	Yes	298	88.96
		No	37	11.04
7	Will you overcome this financial crisis by COVID-19?	Yes	303	90.45
		No	32	9.55
8	How will you overcome the financial crisis by COVID-19 pandemic?	Increasing working time	215	64.18
		Increasing cost of treatment	120	35.82

affected by the COVID-19 pandemic. Ninety percent of them think that they will overcome this financial crisis by COVID-19 pandemic. Sixty-four percent of pedodontists will overcome this financial crisis by increasing working time and 36% of them by increasing the cost of treatment (Table 2).

**DISCUSSION**

The infection control measures should be followed by dental professionals, particularly because aerosols and droplets were considered as the main spread routes of 2019-nCoV. Most pedodontists say that it is very difficult to treat pediatric dental patients by use of a PPE kit, i.e., not comfortable. According and the pediatric patients become negative, i.e., the behavior becomes uncooperative. Indian pedodontists sanitize their working area.

The clinic settings should be cleaned and disinfected in accordance with the Protocol for the Management of Surface Cleaning and Disinfection of Medical Environment released by the National Health Commission of the People’s Republic of China. Public areas and appliances should also be frequently cleaned and disinfected, including door handles, chairs, and desks.<sup>7</sup>

Most pedodontists think that level 3 masks should be used while using an airoter/ultrasonic scaler and disposable masks with rubber bands are preferred by the pedodontists. It is a common misperception that regular surgical masks will protect against aerosols. We are very familiar with occupational health issues in dentistry, such as hepatitis B and hepatitis C, and risk assessment. Many other professions do not have to consider such issues. Splatter is a mixture of air, water, and/or solid substances (50 µm to several millimeters diameter).<sup>11</sup>

Most pedodontists think that children are silent carriers of COVID-19. The virus can be transmitted between the dentist, the dental assistant, and the small patients through the droplets generated by coughing and sneezing or by the dental procedures themselves.<sup>10</sup> All healthcare providers have a moral obligation to care for their patients.<sup>11</sup> The significantly higher risk of going to a crowded place among students could be ascribed to their young age.<sup>12</sup>

Most pedodontists in India are affected by the COVID-19 pandemic and most of them think that they will overcome this financial crisis by the COVID-19 pandemic by increasing working time and 36% of them by increasing the cost of treatment. The strength of this study lies in its large sample recruited during a critical period of the COVID-19 outbreak in India. The pandemic potential of COVID-19 remains a threat for public health and dentists. As no specific treatment is currently available for COVID-19, further research into the pathogenesis of the COVID infection to find appropriate targets for treatment is needed.<sup>13</sup>

**CONCLUSION**

The coronavirus (COVID-19) has challenged health professions and systems and has evoked different speeds of reaction and types of response around the world. The role of pedodontists in preventing the transmission of COVID-19 is critically important. While all routine dental care has been suspended in countries experiencing COVID-19 disease during the period of the pandemic, the need for organized urgent care delivered by teams provided with appropriate PPE takes priority. Major and rapid reorganization of both clinical and support services is not straightforward. Dental professionals felt a moral duty to reduce routine care for fear of spreading COVID-19 among their patients and beyond, but were understandably concerned about the financial consequences.

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