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## **Knowledge & attitude of parents towards pediatric dental treatment for their child in COVID-19 pandemic: A cross-sectional study**

**Suyash Joshi**

Post Graduate student, Department of Pediatric & Preventive Dentistry, Government Dental college & Hospital, Nagpur, India  
Corresponding author email: [suyashjsh@gmail.com](mailto:suyashjsh@gmail.com)

**Nupur Ninawe**

Associate professor, Department of Pediatric & Preventive Dentistry, Government Dental college & Hospital, Nagpur, India  
Email: [nupurgovind@gmail.com](mailto:nupurgovind@gmail.com)

**Ritesh Kalaskar**

Professor and Head of Department, Department of Pediatric & Preventive Dentistry, Government Dental college & Hospital, Nagpur, India  
Email: [riteshpedo@gmail.com](mailto:riteshpedo@gmail.com)

**Rakesh Bahadure**

Associate Professor, Department of Pediatric & Preventive Dentistry, Government Dental college & Hospital, Nagpur, India  
Email: [mdsrakesh\\_pedo@yahoo.co.in](mailto:mdsrakesh_pedo@yahoo.co.in)

**Surendrakumar Bahetwar**

Assistant Professor, Department of Pediatric & Preventive Dentistry, Government Dental college & Hospital, Nagpur, India  
Email: [drsuredra.bahetwar@yahoo.com](mailto:drsuredra.bahetwar@yahoo.com)

**Abstract**--Aim: - The aim of this study was to evaluate the Knowledge & Attitude of parents towards Pediatric dental treatment for their child in view of covid-19 pandemic in India. Setting and design: A Cross sectional study. Materials and methods: A online cross-sectional study containing a structured self-administered questionnaire was designed in English language consisting of total 16 close ended multiple choice questions that were divided based on the demographic data, knowledge and attitude of participating parents. Results: A structured questionnaire was sent to 247 parents of age group between 20-50 years. An observed result was compare accordingly with gender and age group. When we looked for knowledge

based questions it was observed that young parents were found to be more aware regarding children affecting more covid-19 pandemic than compared to older age parents and this difference is highly significant ( $p < 0.005$ ). 61.3% female and 43.9% male parents preferred dental treatment for their child and variation in the responses were found when asked regarding hospital based dental treatment with ( $p = 0.024$  &  $0.032$ ) respectively. Conclusion: - Most of the parents kept themselves updated about information regarding covid-19 vaccination, protocols and preventive measure for their children. They also felt that children will be affecting more in covid-19 pandemic.

**Keywords**--COVID-19, pediatric dental treatment, pandemic surge.

## **Introduction**

COVID-19 is caused by a novel coronavirus (2019-nCoV or SARS-CoV-2) which is transmitted through cough, sneeze, droplet inhalation along with contact transmission through oral, nasal, and eye mucous membranes.<sup>1</sup> On January 31, 2020, World Health Organization (WHO) announced that the COVID-19 outbreak has become a public health emergency.<sup>2</sup> The rapid spread of virus could be reduced by social isolation. Other measures were protection of elderly people, patients with co-morbidities and getting vaccinated as early as possible. Oral health of a child is as important as general health.

Aerosols generated through dental treatment which contain saliva or blood particles had high chances of transmission of the virus. The possible routes for spreading a virus in a dental setting could be through direct contact with body fluids of an infected patient, instruments that have been contaminated by the patient and contact with infectious airborne particles. Therefore, dental departments must adopt strict measures such as screening patients, providing emergency treatment, restricting aerosol operation as much as possible, using extensive protection, and performing environmental disinfection.<sup>3</sup>

As in the first surge of pandemic, older aged and immuno-compromised people were affected. Meanwhile the second surge was somehow more powerful and caused greater havoc with involving more young age adult group.<sup>4</sup> The Health Ministry of India shared data which showed COVID-19 cases were reported in the first surge between aged 30 and above were 67.5% while 69.18% cases registered in second surge. Children might end up getting more affected in the third wave, particularly because there was no vaccination yet available for children till July 2021. The virus had mutated and entire families got infected together with children during the second surge of Covid-19. Meanwhile there is fear of possibility and it has reported that children have been affected in Covid-19 in India.<sup>5</sup>

Parents should make their children understand about social distancing, learning preventive hygiene habits (regular washing of hands, wearing mask and hand sanitizer) and vaccination. Because of the outbreak of covid-19, school closures, uncertainty about lockdown, mental health strains and loss of access to visit their

friends in school made children lonely and depressed. Knowledge and awareness plays an important role in oral health related behaviors of the patients.<sup>6</sup> People have received a large volume of information that could lead to confusion such as contamination risks during dental appointments and fear about delta variant mutation in corona virus. Pediatric dentist had challenge to deal with such frightened parental attitude towards dental treatment. It is important to know if there are any misbeliefs, so that dental specialist can help to improve patient education as well as precautionary methods which were followed in hospitals. Thus, the present study aimed to evaluate the Knowledge & Attitude of parents towards pediatric dental treatment for their child in view of covid-19 pandemic in India.

### **Materials and Methods**

This cross-sectional study targeted parents and guardians of children by convenient sampling method between 20-50 years of age in Nagpur, Maharashtra. The ethics committee at the Government dental college approved the study protocol (IEC/04/07). A structured self-administered questionnaire was designed in English language consisting of total 16 close ended multiple choice questions that were divided based on the demographic data in the first part. In the second part, 5 questions were asked about knowledge (e.g., the fear of covid -19 disease and information about vaccination in children) and in the third part, 8 questions on attitude of parents towards pediatric dental treatment for their child (e.g. Degree of acceptance about the infection control of dental clinic, online/whatsapp consultation, appointment based dental treatment).

The validation of questionnaire was done in Government dental college and hospital, Nagpur. Based on the suggestions given by the expertise, 1 question was removed. For face validity, each question was rated for its importance whether or not it should be included in the study on a two-point scale (0 = yes, 1 = no). For content validity, each question was rated in four domains; relevance, clarity, simplicity, and ambiguity on a four -point scale (1 = needs major revision, 2 = needs some revision, 3 = needs minor revision, and 4 = no need for revision).<sup>8</sup>A structured questionnaire was sent to 247 parents randomly after validation through google forms and WhatsApp. Statistical analysis was performed using chi-square test using software (SPSS software v20) and  $p < 0.05$  was considered statistically significant.

### **Results**

Out of 247 parents, 123 males and 124 females participated in the study (Table no.1). Knowledge based questions were asked to both parents and it was observed that the difference of knowledge of parents regarding covid-19 disease among gender was found to be non- significant with ( $P > 0.05$ ). (Table no 2). Attitude based comparison of parents based on the Likert scale.(Table no.3) shows female's attitude towards child undergoing dental treatment is more significant than male's attitude with ( $P < 0.05$ ). Knowledge of parents regarding covid-19 disease based on comparison of responses among different age groups was observed that young parents were found to be more aware as compared to older age parents and this difference is highly significant(Table no.4). Attitude of parent

was assessed as per different age group (Table no.5). Most of the responses were similar. Meanwhile when asked regarding hospital based dental treatment, the middle aged parents were denied to do the treatment and this attitude of parents according to age group was significant with ( $P < 0.05$ ).

## **Discussion**

Knowledge of parents regarding covid-19 and the attitude related to pediatric dental problem has an effect on their child behavior. Parents act as the primary implementers for their child's oral care. Based on the responses of participated parents, the majority of participants are knowledgeable about COVID-19. Among the participants in our study, all of them passed on COVID-19 information to their children, indicating that they highly value their children's health. Parents aged 20-30 years were more concerned about covid next surge and they felt that their children have more risk to cause covid -19 disease. It may be because most of the younger aged parents were active on social media and kept themselves updated with current knowledge of pandemic. Social media had played an important role in this covid-19 pandemic. Almost more than 90% parents have completed their vaccination turns. Almost middle of 2021, not yet safe proven vaccine was available in the market for below 18 years old children. Infact almost all participated parents were interested to get their child vaccinated as early as possible to prevent a child from covid-19.

Major route of transmission of covid-19 is through saliva, bodily fluids and airborne droplets which can carry a high risk of spread of virus.<sup>3</sup> Jin Sun et al conducted a survey study, 66.2% male and 31.8 % female agreed about dental environment was more hazardous than other places.<sup>9</sup> In our study, 46% female and 48.8 % male parents thought the dental environment was more dangerous than other places. The dental specialist have done their best to provide professional information and solution for the patients. Along with social isolation, wearing mask and sanitizing hand is the most appropriate way of spreading the virus.<sup>10</sup> More than 90% parents in our study were aware with wearing mask and regularly sanitize hands by their children. This credit is to Indian government as it provides regular updates to public through advertisement, news, TV shows and online social media such as Facebook and What's app.

Almost 50% parents were neutral about dental treatment for their child. Most of them visited to dental department for severe toothache, intra oral and extra oral swelling while rest of them delayed to visit for the treatment. Pharmacological management considered as the first line treatment in covid-19 and only urgent treatment of dental diseases can be performed during the COVID-19 outbreak.<sup>11</sup> Government of India started early as possible of vaccination of doctors including dentists as they were higher exposure to virus infected area. Parents were strongly agreed about treating dental problems under vaccinated dentist is more safe than non-vaccinated dentist. Yang et al concluded in their study that online oral health consultation and emergency management of pediatric patient had been helpful to pedodontist<sup>12</sup>. In this study, 48.4 % vs 49.6 female and male parents respectively preferred Whats-app consultation/online consultation before a child visiting to the dental clinic. If it was needed the dental visit, then more

than almost 40% parents were agreed with appointment based dental treatment should be followed to prevent transmission of covid-19 disease.

Ministry of Health and Family Welfare of India had mentioned in guidelines as RT-PCR test is a diagnostic test for covid-19 disease which gives risk assessment prior to plan any dental procedure<sup>13</sup>. As because of long laboratory procedure, most of the parents denied for RT-PCR test before visiting to dental clinic. Personal protective equipment (PPE) kit provides protection and prevent transmission of corona virus but child was surprised and completely frightened with hesitant in allowing examination when looked at PPE kit<sup>14</sup>. Most of the Parents (49.2 % female and 51.1% male) were agreed to visit their child to dental clinic along with single parent to maintain proper physical distance in reception area and avoid unnecessary crowd at dental hospital area. Limitations of current study includes inadequacy regarding parent perception as responses were collected by online mode, acceptance of only educated parents as because questionnaires sent through social media.

### Conclusion

Most of the parents had knowledge about spread and prevention of the virus. Meanwhile the younger aged parents were more concerned about covid-19 as they were more active on social media and kept themselves updated with current knowledge of pandemic. Parents also vaccinated against covid-19 virus and wanted their child to be vaccinated as early as possible to prevent from covid-19 disease. A considerable percentage of parents had little confidence in dental infection control measures and approach in neutral way to prefer dental treatment for their child in pandemic. The fear regarding the surge of pandemic will affect more in children was remarkable in younger aged parents. Vaccine trials for children and adolescents and other COVID-19 vaccines are ongoing and WHO will update its recommendations when the evidence or epidemiological situation justifies a change in policy More efforts should be directed toward parent's knowledge and attitude for encouraging them to prevent their child from covid-19 disease.

Table no 1: Distribution of subjects according to Gender

Gender	n (%)	Total
Male	123 (49.8)	247
Female	124 (50.2)	

Table no 2: Questions about knowledge of parents regarding covid-19 disease based on comparison among male and female

Question	Gender	Yes	No	p value
4. Does your child wear mask and sanitize hands?	Female	94.4	5.6	0.340
	Male	91.1	8.9	
5. Do you feel dental environment is more hazardous for spreading covid-19 infection than other public places?	Female	46.0	54.0	0.703
	Male	48.8	51.2	
6. Have you got vaccinated for covid-19?	Female	87.9	12.1	0.399

	Male	91.9	8.1	
7. Are you willing to get your child vaccinated for covid-19, if permitted?	Female	94.4	5.6	0.797
	Male	93.5	6.5	
8. Do you think the children will be affected more during Covid-19 disease?	Female	63.7	36.3	0.300
	Male	56.9	43.1	

Table no 3: Questions about Attitude of parents regarding covid-19 disease based on comparison among male and female

Question	Gender	SD	D	N	A	SA	p value
9. In view of covid-19 pandemic, would you prefer to undergo dental treatment for your child?	Female	1.6	8.1	61.3	27.4	1.6	0.024 <sup>a</sup>
	Male	7.3	10.6	43.9	33.3	4.9	
10. Dentist who is vaccinated is safer to do your child's dental treatment than non-vaccinated dentist.	Female	1.6	5.6	5.6	32.3	54.8	0.066
	Male	3.3	1.6	14.6	31.7	48.8	
11. In view of covid pandemic, Whats-app consultation/online consultation should be preferred before a child visiting to the dental clinic.	Female	0.0	3.2	25.8	48.4	22.6	0.087
	Male	4.9	0.8	25.2	49.6	19.5	
12. RT-PCR test should be made mandatory before treating the child in dental clinic.	Female	0.8	9.7	42.7	37.1	9.7	0.538
	Male	4.1	8.9	38.2	38.2	10.6	
13. Dentist should wear Personal Protective Equipment (PPE) kit before starting child's dental treatment.	Female	0.0	0.0	23.4	41.9	34.7	0.083
	Male	3.3	0.8	14.6	48.8	32.5	
14. Due to covid-19 pandemic, only one parent should accompany the child during their dental visit	Female	0.8	1.6	8.9	49.2	39.5	0.627
	Male	3.3	0.8	9.8	51.1	35.0	
15. Appointment based dental treatment should be preferred to prevent transmission of covid-19 disease.	Female	0.0	0.8	15.3	41.9	41.9	0.176
	Male	3.3	0.8	16.3	48.0	31.7	
16. Due to covid-19 pandemic hospital based dental clinic (where 3-4 children are treated in single room) are best for dental treatment	Female	36.3	40.3	10.5	10.5	2.4	0.259
	Male	30.1	33.3	17.9	14.6	4.1	

chi-square test; <sup>a</sup> indicates significant difference at  $p < 0.05$

Table no 4: Questions about knowledge of parents regarding covid-19 disease based on comparison of responses among different age groups (Q4 to Q8)

Question	Age	Yes	No	p value
4. Does your child wear mask and sanitize hands?	20-30	91.0	9.0	0.357
	30-40	92.5	7.5	

	40-50	97.7	2.3	
5. Do you feel dental environment is more hazardous for spreading covid-19 infection than other public places?	20-30	48.6	51.4	0.161
	30-40	40.9	59.1	
	40-50	58.1	41.9	
6. Have you got vaccinated for covid-19?	20-30	90.1	9.9	0.331
	30-40	87.1	12.9	
	40-50	95.3	4.7	
7. Are you willing to get your child vaccinated for covid-19, if permitted?	20-30	91.9	8.1	0.479
	30-40	95.7	4.3	
	40-50	95.3	4.7	
8. Do you think the children will be affected more during Covid-19 disease?	20-30	73.9	26.1	0.001 <sup>b</sup>
	30-40	45.2	54.8	
	40-50	41.9	58.1	

chi-square test; <sup>b</sup> indicates significant difference at  $p < 0.05$

Table no 5: Questions about Attitude of parents regarding covid-19 disease based on responses among different age groups (Q9 to Q16)

Question	Age	SD	D	N	A	SA	p value
9. In view of covid-19 pandemic, would you prefer to undergo dental treatment for your child?	20-30	2.7	14.4	50.5	27.9	4.5	0.054
	30-40	4.3	15.4	49.5	37.6	3.2	
	40-50	9.3	4.7	65.1	20.9	0.0	
10. Dentist who is vaccinated is safer to do your child's dental treatment than non-vaccinated dentist.	20-30	3.6	2.7	9.0	29.7	55.0	0.397
	30-40	1.1	6.5	8.6	32.3	51.6	
	40-50	2.3	0.0	16.3	37.2	44.2	
11. In view of covid-19 pandemic, Whats-app consultation/online consultation should be preferred before a child visiting to the dental clinic.	20-30	4.5	0.0	26.1	45.0	24.3	0.056
	30-40	0.0	4.3	29.0	52.7	14.0	
	40-50	2.3	2.3	16.3	51.2	27.9	
12. RT-PCR test should be made mandatory before treating the child in dental clinic.	20-30	3.6	8.1	35.1	43.2	9.9	0.157
	30-40	2.2	8.6	49.5	33.3	6.5	
	40-50	0.0	14.0	34.9	32.6	18.6	
13. Dentist should wear Personal Protective Equipment (PPE) kit before starting child's dental treatment.	20-30	1.8	0.0	17.1	45.0	36.0	0.807
	30-40	1.1	1.1	19.4	49.5	29.0	
	40-50	2.3	0.0	23.3	37.2	37.2	
14. Due to covid-19 pandemic, only one parent should accompany the child during their dental visit	20-30	3.6	1.8	8.1	45.9	40.5	0.414
	30-40	0.0	1.1	8.6	58.1	32.3	
	40-50	2.3	0.0	14.0	44.2	39.5	
15. Appointment based dental treatment should be preferred to prevent transmission of covid-19 disease.	20-30	1.8	0.9	13.5	44.1	39.6	0.685
	30-40	1.1	0.0	15.1	49.5	34.4	
	40-50	2.3	2.3	23.3	37.2	34.9	
16. Due to covid-19 pandemic hospital based dental clinic (where	20-30	26.1	44.1	15.3	9.0	5.4	0.032 <sup>c</sup>
	30-40	41.9	29.0	9.7	18.3	1.1	

3-4 children are treated in single room) are best for dental treatment	40-50	32.6	34.9	20.9	9.3	2.3	
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chi-square test; ° indicates significant difference at  $p < 0.05$

## References

1. Peng X, Xu X, Li Y, Cheng L, Zhou X, Ren B. Transmission routes of 2019-nCoV and controls in dental practice. *Int. J. Oral Sci.* 2020 Mar 3;12(1):1-6.
2. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, Zhang L, Fan G, Xu J, Gu X, Cheng Z. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *The lancet.* 2020 Feb 15;395(10223):497-506.
3. Harrel SK, Molinari J. Aerosols and splatter in dentistry: a brief review of the literature and infection control implications. *J Am Dent Assoc* 2004 Apr 1;135(4):429-37.
4. Severity, Demography of COVID Victims in Second Wave Same As First: Health Min <https://science.thewire.in/politics/government/covid-19-severity-demography-of-victims-in-second-wave-same-as-first-claims-health-ministry/>. It is a snapshot of the page as it appeared on 15 Jun 2021 10:39:48 GMT
5. <https://qz.com/india/2021749/will-indias-third-wave-of-covid-19-affect-more-children/>
6. <https://www.unicef.org/reports/unicef-annual-report-2020>
7. Chambers DW. Communicating with the young dental patient. *J Am Dent Assoc.* 1976 Oct 1;93(4):793-9.
8. Yusoff MS. ABC of content validation and content validity index calculation. *Resource* 2019 Jun 1;11(2):49-54.
9. Sun J, Xu Y, Qu Q, Luo W. Knowledge of and attitudes toward COVID-19 among parents of child dental patients during the outbreak. *Braz. Oral Res.* 2020 Jun 8;34.
10. Chiu NC, Chi H, Tai YL, Peng CC, Tseng CY, Chen CC, Tan BF, Lin CY. Impact of wearing masks, hand hygiene, and social distancing on influenza, enterovirus, and all-cause pneumonia during the coronavirus pandemic: Retrospective national epidemiological surveillance study. *J. Med. Internet Res.* 2020;22(8):21257.
11. Banakar M, BagheriLankarani K, Jafarpour D, Moayedi S, Banakar MH, MohammadSadeghi A. COVID-19 transmission risk and protective protocols in dentistry: a systematic review. *BMC oral health.* 2020 Dec;20(1):1-2.
12. Yang F, Yu L, Qin D, Hua F, Song G. Online consultation and emergency management in paediatric dentistry during the COVID-19 epidemic in Wuhan: A retrospective study. *Int. J. Paediatr. Dent.* 2021 Jan;31(1):5-11.
13. Ali S, Farooq I, Abdelsalam M, AlHumaid J. Current clinical dental practice guidelines and the financial impact of COVID-19 on dental care providers. *Eur J Dent* 2020
14. Sailaja DN. Child-friendly PPE. *Br Dent J.* 2020 Jun;228(12):901-2.