

## Pan-dent-emic: Contemporaneous Advice in Pediatric Dental Practice Post Covid Surge - A Questionnaire Survey

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### Abstract

COVID-19 had a catastrophic effect on the world resulting in more death worldwide. It possessed a risk of spread, hence there was a need in modification of dental treatment of children. AAPD and WHO suggested modifications in few treatment protocols/ techniques like Hall's technique, rubber dam, Tell-show-do, silver diamine fluoride and limiting the use of syringes which were adapted amongst dentists. A survey using Google forms was composed referring to various scientific journals and articles to assess the changes adopted by the pediatric dentists post pandemic. This survey was circulated amongst 400 pediatric dentists. In this survey, the techniques and methods adopted by the dentists during the covid pandemic period and continuing those protocols in their clinical practice post covid were evaluated.

**Keywords:** children; modified pediatric treatment protocol; post covid; preventive dentistry; behavior management

### Introduction

In December 2019, Chinese authorities announced an emergence of severe pneumonia of unknown origin in Wuhan. This was later named as COVID 19, which stands for coronavirus disease [1]. The most commonly seen symptoms are fever, chills, cough, and shortness of breath or difficulty in breathing, fatigue, muscle or body aches, headaches, loss of taste or smell, sore throat, nausea, vomiting, diarrhea. Considering the nature of dental treatment which leads to direct exposure to saliva, blood, aerosols, or droplets from infected individuals, dentists are at a significant risk of contracting the infection [2]. Few studies also state that coronavirus was detected in the saliva as well as the nasopharyngeal aspirate [3]. Furthermore, high transmissibility and the pandemic nature of the disease amplifies the importance of formulating a consensus within the dental community to fight this emerging threat during dental care [4].

In order to limit the virus's transmission, considerable changes were made in routine dental practice to limit the transmission of coronavirus [5]. According to various studies carried out healthcare workers are considered at higher risk of contamination as dentists are required to be in close proximity with their patients [6, 7]. in order to minimize the spread of infection between the dentist, patients and the supporting staff. WHO had come out with safety protocols to be followed before and after the treatment [8].

The modified dental practice for pediatric patients during the pandemic affects the behavioral guidance issue while seeking routine dental treatment as interaction was reduced only to emergency care this led to the deterioration in development of rapport, thereby affecting the complete quality of dental care provided to children [9].

Dental Procedures involving minimal intervention dentistry which help in reducing the aerosol generation thereby preventing cross contamination were given consideration by pediatric dentist towards their patient [10].

The purpose of this survey was to understand behavior guidance and treatment protocols by practicing pediatric dentists during post covid era. Additionally, this survey aims to share and transfer the experiences, opinions and needs of pediatric dentists with other pediatric dentists, this will benefit to achieve optimized dental care.

## Methodology

This survey was created using google forms. The questionnaire was made by referring various scientific journals and articles. The survey consists of a total of 29 questions which are divided into three parts for ease of understanding. This survey was then circulated amongst dental practitioners using social media platforms. The authors received a total of 304 responses. The responses were then divided into various categories and discussed in the later sections.

## Results

### Demographic Data

Sl. No.	Questions	Responses	N	%
1.	Age	19-30	156	51.3
		31-40	98	32.2
		41-50-	30	9.8
		51-60	19	6.25
		61-70	1	0.3
2.	Gender	Male	110	36.5
		Female	194	63.5
3.	Zone of practice.	Urban	237	78
		Rural	67	22
4.	Are you currently practicing pediatric dentistry, after COVID-19 related restriction?	Yes	202	66.4
		No	71	23.4
		Emergency cases only.	31	10.2
5.	Place of practice.	Hospital/institution	185	60.9
		Private practice	62	20.4
		Both	57	18.8

**Table 1**

*Behaviour Guidance Protocols*

<i>Sl. No.</i>	<i>Questions</i>	<i>Responses</i>	<i>N</i>	<i>%</i>
1.	Do you feel that the stressful circumstances that we're going through in general is affecting children's behavior in the dental office?	Yes	201	66.1
		No	29	9.5
		Maybe	74	24.3
2.	Would you use any physical restraints while treating uncooperative child in your practice?	Yes	82	27
		No	222	73
3.	If yes, mention the physical restraints used.	Mouth props		
		Papoose trap		
		Extra assistants		
		Others		
4.	Do you use tell show do technique and ask the patient to touch the instruments post covid era?	Yes	213	70.1
		No	91	29.9
5.	Would you perform any sedation sessions post pandemic if needed?	Yes	190	62.8
		No	114	37.2
6.	Whether toys/mobile phones were used for distraction purposes while treating the child?	Yes	161	53
		No	49	16.1
		Sometimes	94	30.9
7.	Whether indispensable, anti-retraction handpieces or electric friction handpieces used post pandemic?	Yes	194	63.8
		No	110	36.2
8.	Would you minimize the use of 3-way syringe to avoid splatter?	Yes	240	78.9
		No	64	21.1
9.	Do you agree that PPE kit gives you complete protection?	Yes	154	50.7
		No	50	16.4
		Maybe	100	32.9
10.	Post pandemic, do you feel that you are apprehensive and anxious regarding infection control while performing dental procedure?	Yes	152	50
		No	63	20.7
		Maybe	89	29.3
11.	Do you think saliva is a potential source for covid-19 infection?	Yes	246	80.9
		No	58	19.1
12.	Do you practice the use of pre-procedural antiseptic mouth rinse post pandemic?	Yes	275	90.5
		No	29	9.5
13.	Can rapid antigen test be used as a chair side diagnostic test prior to surgical procedure?	Yes	133	43.8
		No	47	15.5
		Maybe	124	40.8

**Table 2**

*Paragdim Shift in Treatment Protocols Post Covid*

<b>Sl. No.</b>	<b>Questions</b>	<b>Responses</b>	<b>N</b>	<b>%</b>
1.	Would you prefer parents accompanying their child in the operatory area during their treatment?	Yes	152	50
		No	43	14.1
		Sometimes	109	35.9
2.	Whether chemo mechanical caries removal techniques used as an alternative to airtor in your practice?	Yes	122	40.1
		No	55	18.1
		Sometimes	127	41.8
3.	Do you prefer to use rubber dam for all aerosol procedures post covid?	Yes	155	50.3
		No	37	12.2
		Sometimes	114	37.5
4.	Do you prefer advising extraoral radiographs instead of intraoral radiographs post covid?	Yes	108	35.5
		No	63	20.7
		Sometimes	133	43.8
5.	Do you prefer to perform atraumatic restorative treatment instead of conventional methods of caries removal?	Yes	118	39.1
		No	47	15.1
		Sometimes	139	45.7
6.	Do you prefer using silver diamine fluoride to arrest the progression of dental caries as an alternative to conventional treatment modality post covid?	Yes	137	45.1
		No	36	11.8
		Sometimes	131	43.1
7.	Do you use Hall's technique for placement of stainless-steel crown as an alternative to conventional placement of stainless-steel crown?	Yes	87	28.6
		No	59	19.4
		Sometimes	158	52
8.	Do you prefer extraction and space maintainer over pulpectomy as a treatment option to reduce the aerosol post covid?	Yes	137	44.9
		No	167	55.1
9.	Do you prefer preformed space maintainers over lab fabricated space maintainers to reduce the number of follow up visits post covid?	Yes	187	61.4
		No	117	38.6
10.	Do you prefer practicing single visit pediatric dentistry to reduce the number of follow up visits post covid?	Yes	221	72.9
		No	83	27.1
11.	Do you avoid performing any preventive dental procedures in children to reduce the number of dental visits post covid?	Yes	182	60
		No	122	40

**Table 3**

## Discussion

### *Part 1: Demographic Data (Table 1)*

A total of 304 filled responses were considered as baseline data for assessment. The age group of the Pediatric dentists participants ranged from 20-60 years with majority of them between the age of 30-40 years old.

The number of female respondents outnumbered the male respondents this shows the recent trend in dentistry inferring that dentistry is an opted profession by the female gender. Most of the practitioners were urban oriented. More than 60% of the respondents were practicing dental care for children after COVID-19 restrictions indicating probably that their practice is limping back to normalcy post covid era. Majority of the participants having Pediatric dental practice in a hospital or institution based on overall sterilization protocols, access to emergency dental care including anesthesia and related infrastructure made available during & post COVID.

### *Part 2: Paradigm Shift in Behaviour Guidance Methods: (Table 2)*

Tell show do technique was the most employed technique to manage children and conscious sedation was adopted when needed (63%). Half of the respondents employed the availability of smart tech devices when needed. Post covid era showed many stressful dental circumstances arised due to various pending dental treatments, wherein 66% of children invariably showed uncooperative and difficult behavior. When physical restraints were required the scientifically used time tested techniques were used like mouth props and pappose boards.

The responses pertaining to using physical restraints inferred that there is a general change in trend of child management from non-verbal to verbal techniques. This suggests the importance of interpersonal communication between the child, parents and the dentist. This also helped dentists in seeking the interest and trust of the child and parent. Conscious sedation (63%) was employed when needed. More than half of the respondents employed the availability of smart tech devices like smartphones and toys as distraction method as well for child management.

Respondents stuck to the routine methods of using the respective hand-pieces suitable for pediatric practice probably keeping in mind the sterilization protocol. Most of the respondents (79%) minimized the use of 3-way syringes to avoid splatter, which was practiced in covid times. And 50% of the respondents agreed on PPE kit protection inferring the standard protocols to be followed post COVID-19 were in place in most of the clinics. But 50% of the respondents felt apprehensive and anxious about cross contamination of covid, probably inferring that they became highly selective on a need to do basis about the procedures to be performed on the patient and they also reported that their practice is meeting the standards of their lifestyle financially.

In addition, saliva was considered as a potential source for COVID-19 transmission by 50% respondents and almost 90% of them used pre-procedural antiseptic mouth rinse.

There were an equal number of respondents (44% and 41%) who vouched for the rapid antigen test kit before surgical procedures and at the same time not really sure about its use. The reasons for the same maybe the low-cost factor of the kit, accuracy of the results and increase in vaccination shots amongst the population and awareness of the disease.

Our study results are supported by other studies in the literature. Overall, it is observed that most of the parents think seeking dental treatment for their children is difficult situation to go through and according to pediatric dentists tell show do is widely employed in addition, physical restraints and use of technologies are used to control uncooperative behaviour [11]. Practitioners base on their knowledge and experience saliva and aerosols could be still a potential source of infection and continued practicing the use of anti-septic mouth rinses [12].

### ***Part 3: Shift in Treatment Protocols Post COVID-19: (Table 3)***

Presence of parents in the operatory was preferred by half of the respondents in spite of covid protocols, stating the presence of third party only in case of an emergency, this suggests importance of parental presence during treatment.

The spread of COVID-19 was attributed highly to aerosols as per scientific literature and probably owing to this fact 40% of the respondents used preventive procedure as compared to airtor procedures and close to 36% used extra oral radiographs in managing dental cases is still in practice.

Continuing on the same practices to avoid aerosol spray 50% respondents used Rubber dam for all aerosol procedures and the combined 85% of the practitioners used Atraumatic Restorative Treatment techniques regularly. Silver Diamine Fluoride was most preferred (88%) even to arrest Dental Caries as an alternative to avoid splatter using airtor as a treatment option reinforces the effectiveness of caries reduction.

Most of the respondents still preferred preventive procedures as a tooth saving option indicating preservative & conservative treatment mindsets, as compared to radical modes.

Hall's technique for stainless-steel crown placement is preferred by 80% of respondents, to avoid the tooth preparation by airtor, Preformed space maintainers were the most preferred option so as to reduce intraoral procedures further extension of dental treatment and as a long-term arch stability.

The number of visits to dental practice was substantially reduced to single visit by majority of respondents, opt for pulp therapy to reduce the exposure to COVID environment has continued post covid.

In our study the post covid era data reported increased number of parents are willing to undergo further treatment required after the loss of tooth and readily agreed for follow up procedures. In line with other studies our result showed, Time constraints favored the single visit dental procedures rather than multiple visits [13] In general, pediatric dentists opted for minimally invasive dentistry under aseptic protocols [14, 15].

### **Conclusion**

The important findings of this study showed that there has been considerable change in the behavior of children post pandemic which may have been caused due to various pending dental treatments, reduced interaction which led to more pain and its associated symptoms calling it as difficult procedures. Regarding the treatment protocols most of the practitioners have opted for preventive and conservative treatment which leads to minimal aerosol production. However, more sample size has to be studied with various treatment modalities applicable to children towards practicing standard dental care.

### ***Why this study is important to dentists and pediatric dentists:***

1. Can avoid cross contamination as there is minimal aerosol production.
2. Increase in the quality of care and clinical work.

### ***Conflict of interest***

There is no conflict of interest.

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