

# Attitude And Practices of Oral Health Care Behaviour and Eating Habits in Children During Covid-19 Pandemic

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**Abstract:- Background:** Teeth are always at risk for variety of dental diseases such as cavities, infections etc. Primary teeth are more vulnerable due to lower mineralization density, and it is crucial to start protecting them early. So, the first line of defense will be proper care and maintenance of their oral cavity. What child eats has a direct effect on overall health including dental health and especially in these unprecedented times of COVID-19 pandemic where maintaining a good immunity is of utmost importance and parents have a key role in achieving this.

➤ **Aim:**

To evaluate the attitude and practices of oral health care behaviour and eating habits in children during covid-19 pandemic.

➤ **Method:**

A survey was conducted among 406 parents throughout India. Data were collected through a specially designed proforma using a closed- ended, self-administered validated questionnaire containing 25 questions.

➤ **Results:**

Most of the children encountered dental ailments during this pandemic period as sugar intake increased in more than half of the studied population with less than usual supervision from parents and maintenance of oral hygiene also declined. COVID-19 has negatively impacted their child's eating habits and oral hygiene practices and extra care is needed towards children's eating habits and oral hygiene measures during these difficult times.

➤ **Conclusion:**

COVID-19 has impacted everyone's life, especially children who due to year-long lockdown and limited access to outside environment have switched to a very unhealthy lifestyle. This problem needs to be addressed with utmost urgency as healthy eating habits and maintaining hygiene not only impacts our physical health but mental health too.

**Keywords:-** Eating habits, oral health problem, toothache, Teleconsultation, COVID-19, oral hygiene, sweet consumption.

## I. INTRODUCTION

Since dental profession possesses higher risk of infection transmission via droplets and aerosol generated during few necessary treatment procedures, fear of contracting the infection in patients as well as dentists while treatment has led to restricted elective dental services. Parents visited dentist only in case of emergency such as severe pain, and relied on self-medication to relieve pain and postpone the required dental treatment. This has led to the need of more vigilance of their child's eating habits & enactment of aids for maintenance of better oral hygiene. It has been established that the more positive is the parents' attitudes; the better will be the oral health of their children.<sup>1</sup>

The World Health Organization (WHO) on March 11, 2020, has declared the novel coronavirus (COVID-19) outbreak a global pandemic.<sup>2</sup> SARS-CoV-2 is a single stranded RNA virus of beta genera and *Coronaviridae* family. The infectivity potential of the virus is remarkable due to its airborne transmission through droplets and aerosols.<sup>3,4</sup>

Therefore, the aim of our present study was to gather information related to children’s eating habits and oral hygiene measures taken by them during this pandemic and to assess parents’ attitude towards their children’s eating habits and oral hygiene.

**II. MATERIALS AND METHODS**

The total sample size estimated was (N= 400). A questionnaire comprising of 25 questions was formulated and then was validated by pedodontics, public health personnel and community health dentistry personnel along with parents. Parents of children aged below 13 years and willing to participate in the study were included and those with children beyond age of 13 years and not willing to participate were excluded from the study.

A structured questionnaire was distributed to parents via different social media platforms and printed out formats to parents visiting the Dept. of Pediatric Dentistry after validation and a brief explanation about the objectives of the survey was given. The first part of questionnaire included the demographic details of each participant.

The second part of questionnaire, questions assessing parents’ knowledge about Covid-19 and its spread and questions assessing their efficiency towards maintenance of oral hygiene of their children during COVID-19 lockdown period. The third part comprised of questions about children’s eating habits during lockdown and its impact on their oral health. All the questions in the questionnaire were close ended providing multiple answers for each question and parents were asked to mark the option which they perceived to be appropriate.

**III. RESULT**

1. Comparison of distribution of parents' responses to the questions on awareness of COVID-19 & their working status using Chi Square Goodness of Fit Test					
Questions	Responses	n	%	$\chi^2$ value	p-value
4. Are you aware about COVID-19 infection?	Yes	325	80.0%	417.345	<0.001*
	No	5	1.2%		
	Somewhat	76	18.7%		
5. Do you know how COVID-19 spreads in children?	Yes	294	72.4%	279.759	<0.001*
	No	49	12.1%		
	Not sure	63	15.5%		
6. What is your profession?	Stay at home parent	157	38.7%	20.847	<0.001*
	Working parent	249	61.3%		
7. If working, what is your working schedule?	9AM-5PM	38	9.4%	187.325	<0.001*
	Night shift	20	4.9%		
	Flexible hours	54	13.3%		
	Working from home currently	137	33.7%		
	Stay at home parent	157	38.7%		

\* - Statistically Significant

Fig 1:- Responses on covid awareness

2. Comparison of distribution of parents' responses to the questions on Monitoring of their child's oral hygiene practices using Chi Square Goodness of Fit Test					
Questions	Responses	n	%	$\chi^2$ value	p-value
8. Do you supervise your child's toothbrushing?	Yes	190	46.8%	35.251	<0.001*
	No	120	29.6%		
	Sometimes	96	23.6%		
9. How many times does your child/ children brush their teeth?	Once per day	220	54.2%	193.897	<0.001*
	Twice per day	181	44.6%		
	More than 2 times	5	1.2%		
10. How long do they brush their teeth for?	< 1 min	69	17.0%	198.749	<0.001*
	2-3 mins	204	50.2%		
	> 3 mins	11	2.7%		
	It varies every time	122	30.0%		
	Yes, Playing	57	14.0%		
	Yes, Talking	78	19.2%		
	No. does not engage in any other activity	187	46.1%		

\* - Statistically Significant

Fig 2:- Responses on monitoring child’s oral hygiene

A total of 406 participants filled out the questionnaire and most of the parents had children between the age group of 8-13 (42.4%) years. There was no statistical significance between the parents with single child and parents with multiple children. Currently COVID-19 is a known pandemic and when asked, (98.9%) of the studied population in this study were quite knowledgeable regarding this infection and mode of transmission (Table.1). Most (61.3%) of the parents who filled out this questionnaire were working member of the family which was statistically significant with flexible hours of working during this pandemic (Table.1). When they were questioned about their children’s oral hygiene habits including brushing frequency, duration, and their ability to supervise them, 46.8% answered positively while 23.6 were not so regular with their supervision and (29.6%) answered negatively. In the study (44.6 %) children brushed their teeth twice a day regularly whereas most of them (54.2%) brushed only once which was statistically significant (Table.2).

3. Comparison of distribution of parents' responses to the questions on Monitoring of their child's eating habit during lockdown using Chi Square Goodness of Fit Test					
Questions	Responses	n	%	$\chi^2$ value	p-value
12. How efficiently were you able to monitor your child's eating habits during lockdown	Very Actively	95	23.4%	30.034	<0.001*
	Not so much	127	31.3%		
	As usual	184	45.3%		
13. During COVID - 19 pandemic, how has your child's intake of sugar-sweetened beverages and fried food stuff changed?	Increased	179	44.1%	80.724	<0.001*
	Decreased	50	12.3%		
	Not much changed	177	43.6%		
14. During lockdown how many times per day did you give your child sweetened food stuff?	Mealtime only	52	12.8%	205.350	<0.001*
	In between meals	92	22.7%		
	3-4 times per day	40	9.9%		
	On demand of the child	222	54.7%		
15. During lockdown, how has your child's daily intake of fruits and vegetables changed?	Increased intake	42	10.3%	262.601	<0.001*
	Decreased intake	76	18.7%		
	As usual	288	70.9%		

\* - Statistically Significant

Fig 3:- Responses on Monitoring eating habits in COVID-19

4. Comparison of distribution of parents' responses to the questions on practices of Nutritional supplements for immunity boosting during lockdown using Chi Square Goodness of Fit Test					
Questions	Responses	n	%	$\chi^2$ value	p-value
16. During COVID - 19 pandemic, has your child's intake of nutrition supplements to boost immunity changed?	Yes, Homemade immunity booster	161	39.7%	--	--
	Yes, Vitamin supplements	159	39.2%		
	Yes, Health drinks	138	34.0%		
	Yes, Herbal products	105	25.9%		
	No, I did not give any immunity booster	93	22.9%		
17. Have you come across any learning medium for healthy food tips during lockdown in the media?	Yes, Newspaper articles	37	9.1%	481.172	<0.001*
	Yes, Internet	180	44.3%		
	Yes, Blogs/video	39	9.6%		
	Yes, TV shows	8	2.0%		
	Yes, Text messages	1	0.2%		
	Yes, social media-WhatsApp, Facebook etc.	126	31.0%		
	No, I did not come across any such information	15	3.7%		

\* - Statistically Significant

Fig 4:- Responses on using immunity boosters

A total of (45.3%) of the parents were able to supervise their child's eating pattern and brushing habits as usual whereas (23.4%) were especially active for supervision but, (31.3%) were unable to do so (Table.3). For most of the children (44.1%) intake of sugar increased. With parents giving sugar sweetened and fried food on their demand during this lockdown period for (54.7%) which resulted in various dental problems encountered by most of the children (71.4%). While (59.4%) of the parents included in the study were able to consult a dentist via different methods such as direct consultation or teleconsultation etc., (40.6%) were unable to do so (Table. 5). For (18.7%) of the children, daily intake of fruits and vegetables was reduced during lockdown but for (70.9%) it was as usual which was statistically significant (Table.3). Moreover, (77.1%) of parents started giving the children nutrition supplements to boost their immunity and most of them (44.3%) heavily relied on internet for healthy food tips during this period which was also statistically significant (Table.4).

5. Comparison of distribution of parents' responses to the questions on management of child's dental problem during lockdown using Chi Square Goodness of Fit Test					
Questions	Responses	n	%	$\chi^2$ value	p-value
20. Did your child encounter any dental problems during lockdown? If yes, what?	No, they did not encounter any problem	116	28.6%	114.197	<0.001*
	Yes, Bad Breath	51	12.6%		
	Yes, Dental Caries	71	17.5%		
	Yes, Tooth ache	109	26.8%		
	Yes, Swelling in the mouth	14	3.4%		
	Tooth mobility	45	11.1%		
21. Were you able to find any dentist during lockdown? If yes, how did you consult?	Yes, Direct consultation	88	21.7%	25.365	<0.001*
	Yes, Tele-consultation	153	37.7%		
	No, I could not find any dentist	165	40.6%		

\* - Statistically Significant

Fig 5:- Responses on dental problems

Therefore, when asked directly whether this pandemic had a direct impact on oral health of their children (22.4%) were positive with their response, (37.7%) were not so sure and (39.9%) did not find any direct impact of COVID-19 on their children's habits (Table.6). About (40.9%) of them were sure that they should provide extra care towards their child's eating habits and oral hygiene measures during these

times whereas (23.6%) said that usual care was enough and a small portion (2%) of studied population did not feel the need of giving any special attention. (Table.6). Even after not feeling the need for extra care, (57.6%) of the parents agreed that this pandemic had detrimental effects on their children which were statistically significant (Table.6).

6. Comparison of distribution of responses to the questions on attitude of parents towards impact of COVID 19 on their child's oral health using Chi Square Goodness of Fit Test					
Questions	Responses	n	%	$\chi^2$ value	p-value
22. Do you think COVID-19 pandemic had a direct impact on oral health of your child?	Yes	91	22.4%	22.084	<0.001*
	No	162	39.9%		
	Maybe	153	37.7%		
23. Do you feel parents should give extra care towards oral hygiene of children during these times?	Definitely	166	40.9%	238.778	<0.001*
	Maybe	124	30.5%		
	Don't know	12	3.0%		
	Usual care is enough	96	23.6%		
	No	8	2.0%		
24. How has pandemic affected the oral health of your child according to you?	Detrimental effects due to poor eating habits	234	57.6%	110.03	<0.001*
	Improvements due to more supervised time with parents at home	74	18.2%		
	No Changes	98	24.1%		

\* - Statistically Significant

Fig 6:- Responses of parents on COVID-19 impacting oral health

#### IV. DISCUSSION

COVID-19 has changed the face of the world in last couple of years. People with all age group, social background, and ethnicity have been affected by this infection. Especially children all over the world have experienced drastic changes in their lifestyle.<sup>5</sup> Due to the fear of contracting this deadly infection, parents have safeguarded their children by limiting themselves and their children's access to outside world which unfortunately has affected the healthcare needs of patients. Unavailability or limited accessibility of healthcare professionals including dentists has had a damaging effect on oral health of patients.<sup>5</sup>

In the present study (71.4%) of the children needed dental treatment for various ailments and (40.6%) of them were not able to consult a dentist, which in turn might lead to worsening of these conditions. Oral health is not a separate entity but an integral part of overall health of an individual. Majority of the studied population were working member of the family therefore faced a little difficulty in supervising their children 24\*7 leading to poor eating habits such as increased intake of sugar sweetened food, fried food etc. throughout the day and not brushing their teeth regularly and as efficiently as needed. Children being inside the house for longer period led to poor lifestyle with almost negligible physical activity. Similar results were found in a study conducted in Brazil which concluded that most families have experienced changes in daily routine and eating habits during the pandemic.<sup>6</sup>

Another study conducted in Italy concluded that the need for campaigns to promote hygiene and dental care in combination with food education for a correct habit and promotion of a healthy and sustainable dietary style is important.<sup>7</sup>

Roberta Pujia et.al also had similar data which highlighted the need to carefully monitor eating behaviors to avoid the establishment of unhealthy eating habits and prevent obesity in children and adolescents during periods of self-isolation.<sup>8</sup>

Regarding their tooth brushing habits we saw that (44.6%) of the children brushed their teeth twice a day which had a detrimental effect on oral hygiene. Similar conclusion was drawn from a Peruvian study conducted in the year 2020 which concluded that covid-19 pandemic negatively impacted daily toothbrushing and minimum twice-daily toothbrushing habit of children.<sup>9</sup>

We also asked about the frequency of consumption of the following foods before and during the lockdown period: vegetables, fruits, sugar-sweetened beverages, and fast food and found out that majority of parents gave sugar-sweetened and fried food on child's demand which negatively affected the oral health.

## V. CONCLUSION

Pandemic is not over yet. Still there are periods of lockdowns/restrictions across the world. This stresses the importance of parents to be more vigilant about eating habits, personal hygiene including the dental care for overall health and wellbeing of their children.

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