

EFFECT OF COVID-19 PANDEMIC ON PARENT'S PERCEPTIONS FOR PAEDIATRIC DENTAL CARE: A QUESTIONNAIRE STUDY

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ABSTRACT

Background: Severe measures have been implemented around the world to reduce COVID-19 spread with a significant impact on family dynamics.

Aim: To assess the impact of the pandemic on fear, dietary choices and oral health perceptions of parents.

Design: Questionnaire containing 15 questions was remotely applied 500 parents of children aged 0-12 years. The questions addressed topics regarding changes in daily routine, dietary habits, fear level, oral health, and variation of income during the pandemic. Data analysis included the description of the relative and absolute frequencies of the variables. Association tests were performed using Fisher's exact and Kruskal – Wallis test.

Results: 73 % of respondents reported income loss. Two hundred eighty four people denied seeking medical or dental care. 61.5% of respondents revealed changes in the dietary pattern; most of them mentioned an increase in food intake. Most parents (66.6%) would only seek urgent dental care. There was an association between parents' willingness to take their children to dental appointments with the fear level ($p < 0.001$).

Conclusions: During the pandemic, most of the families have changed their daily life routine and eating habits. Parents fear COVID-19 and it impacts their behaviour regarding seeking dental care for their children.

Key Words: Coronavirus infections, COVID-19, Pandemic, paediatric patients

INTRODUCTION:

Corona virus disease 2019 (COVID-19) has crippled health care delivery throughout the globe. Paediatric patients pose unique challenge during the pandemic as they don't understand the basic tenets of covid-19 safety protocols such as social distancing and personal hygiene measures. Routine dental care was the worst affected among all services, and almost all the countries had posed severe restrictions

towards dental procedures generating aerosol, fearing the spread of COVID-19.

On March 11th 2020, The World Health Organization (WHO) characterized the Coronavirus Disease 2019(COVID-19) as a pandemic. The disease was first reported in December 2019 to WHO China Office as pneumonia of unknown cause. In January 2020, a novel corona virus (SARS-CoV-2) was identified, and its genome

sequencing was released (World Health Organization, 2020c).

By March, 2nd 2022 the world had registered 4,39,116,596 COVID-19 cases and 59,85,611 deaths (Centre, 2022, numbers widely higher than those reported during the two outbreaks with coronaviruses in the recent past.

COVID-19 has high contagiousness and rapid spread (Sanche et al., 2020), mainly through small droplets from the nose and mouth expelled when an infected person speaks, coughs or sneezes (World Health Organization, 2020b). Even patients with no symptoms seem to be able to transmit the virus (World Health Organization, 2020b). The majority of the infections are mild or asymptomatic (80%), while about 5% are critical infections (World Health Organization, 2020b). Governments have established policy responses to combat the corona virus pandemic, including measures to restrict people's transit, business operations, social distancing, cancellation of services, reservations and events (Coulthard, 2020; Ministry of Economics, 2020; Peloso, Ferruzzi, & et al., 2020). Those measures have led to stay-at-home orders, social distancing, lockdowns, job losses, insecurity, concerns, fears, and a decrease in the quality of life of families worldwide (Ornell, Schuch, Sordi, & Kessler, 2020).

The increasing number of cases has divided opinions regarding the economy reopening and resumption of once-routine daily life. It has directly affected habits, bringing concerns toward the future in general. The changes in diet, economic issues, general concerns, fear, added to the lack of preventive dental care, could impact the oral health of children during the enforced

stay-at home orders. Thus, this study aimed to assess the fear level, dietary choices and parent's oral health perceptions during the stay-at-home orders period in India.

MATERIAL AND METHODS:

A cross-sectional study was carried out using non-probabilistic sampling, with parents of children aged 0–12 years.

The representative sample size was estimated using a 95% confidence level and margin of error of 5%. The sample size was estimated at a minimum of 385 respondents.

A structured questionnaire was developed according to the CHERRIES recommendations (Eysenbach,2004).

The questionnaire contained 19 mandatory questions about socioeconomic and demographic dates, fear income variability, eating habits and parent's oral health perceptions. The original questionnaire was an open survey, using the Google Forms platform and forwarded to parents and caregivers of children aged 0–12 years through social media and message apps from April 12th to May 9th, 2021. It was available for 29 days. All parents who fit the criteria of having children under 12 years of age could answer the questionnaire. The questionnaire is shown in Table1. The approximate time for the answer to the questionnaire was informed, being about five minutes. The answers and data obtained were stored by the researchers and used only for this study. To ensure the anonymity of each respondent, no identifying information was collected. Before sending the questionnaire, participants could change their answers many times as they wish. No duplicate

response control tool was used, but if identical responses in sequence were observed, one was excluded.

The answers obtained were tabulated in Excel (Microsoft Corp., Redmond, USA), and the statistical analysis was performed using the IBM-SPSS 22.0 software. The fear level was categorized into ‘0to2’,

‘3to5’, ‘6to8’ and ‘9to10’. Fear levels 6–8 and 9–10 were considered moderate and high fear, respectively.

Data analysis included the description of the relative and absolute frequencies of the variables. Association tests were performed using Fisher's exact and Kruskal-Wallis tests for ordinal variables.

Table.1

Translated questionnaire sent to parents and legal guardians of children aged 0–12 years old.

	QUESTIONS	OPTIONS
1	Where u live?	
2	What’s your age?	
3	Regarding minors living in your house. You are;	Mother; Father; Other (the volunteer could write the answer)
4	How many people stays with you?	2; 3; 4; 5 or more people.
5	What are the activities you do & don’t during pandemic due to fear of getting covid-19?	Go to health offices/clinics (doctor, dentist, psychologist, etc.); Go to grocery stores; Go out for leisure; Visit relatives and friends; Go to work; Go to school/college; I am not doing any of the listed activities; I am doing all the activities I used to do; other (the volunteer could write the answer).
6	Describe your fear due to covid in rating scale 0 to 10. (Where 0 is no fear & 10 is terror)	0; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10.
7	Which alternative best describes the impact of the pandemic on your family income.	Family income not impacted; slightly reduced; drastically reduced; Total loss of income; Increased during the pandemic.
8	There has been any change in food consumption in your home during the pandemic?	Yes, we are eating cheaper foods; Eating less than before; Eating more than before; There was no change in food intake; other (the volunteer could write the answer).
9	Is there any change in your regular eating habit during this pandemic?	We are consuming more processed food with sugar such as soft drinks, sweet sand cookies; consuming more pasta and carbohydrates; Consuming more healthy food such as fruits and vegetables;

		Consuming more snacks and/or frozen food; Nothing has changed.
10	How's your family's daily schedule during the pandemic?	We are not leaving the house for anything; leaving the minimum necessary (pharmacy, supermarket, etc.); Leaving just to work; Leaving the house as usual.
11	Is anyone in your family member including you have had symptoms of covid-19?	Yes, but the person was not tested; yes, the test was negative for COVID-19; yes the test was positive for COVID-19; No one has had symptoms or has been diagnosed with COVID-19.
12	Is there any kid do you have whose age group under 0-12 years?	1; 2; 3; 4 or more
13	And any of your kid has undergone dental treatment before pandemic?	Yes, orthodontic treatment; Yes, caries treatment; Yes, because of toothache; Yes, because of dental trauma; other (the volunteer could write the answer).
14	Would you take your kid to a dental appointment during the pandemic?	Yes, for any procedure; Yes, but only for urgent treatments; No; other (the volunteer could write the answer).
15	If not, for what cause?	Risk of contracting COVID-19; the dental treatment is not urgent; my child/ I has/have symptoms of COVID-19.
16	Has your kid brushes his or her teeth in this pandemic time?	Yes; No; Sometimes.
17	Has any of your kid find dental trauma during the pandemic?	No; Yes, I sought care right after the trauma and my child was assisted; Yes, but I did not seek care; Yes, I sought care, but we were not assisted; other (the volunteer could write the answer).
18	Have you noticed any cavities/caries in your children's teeth during the pandemic?	No; Yes, I sought care and my child was assisted; Yes, but I did not seek care; Yes, I sought care, but we were not assisted; other (the volunteer could write the answer).
19	Have you noticed any toothache during pandemic in your kid?	No; Yes, I sought, and my child was assisted; Yes, but I did not seek care; Yes, I sought care, but we were not assisted; other (the volunteer could write the answer).

RESULT:

A total of 500 questionnaires were filled via online questionnaire.

The great majority of respondents (97.2%) were parents (mother/father), with an average age of 36.6 years (s.d. = \pm 6.97). Most families (73%) disclosed are reduction in income, with 52.9% reporting a slight reduction and 20.1% drastic reduction or total loss of income.

Regarding the number of people living in each house, 82.6% of the households had three to four people, and 94.1% of respondents had 1 or 2 children aged 0 to 12 years. No association was found between these variables and the reported presence of caries lesions, dental pain or dental trauma ($p > 0.05$). Only 1.8% of respondents had confirmed COVID-19, and 6.9% had symptoms but were not tested.

284 people declared not leaving their houses for medical or dental appointments, and 438 were not doing leisure activities. Forty-three percent said they were leaving their houses only when necessary, and 52.8% stated leaving their houses to work. 61.5% of respondents reported changes in eating habits during the pandemic; most of them revealed an increase in food intake (Fig.1). Of those who claimed changes in eating habits, only 33.1% said they were choosing healthier foods, while the others increased the consumption of processed foods, pasta and snacks (Fig. 2). Families with drastic or total loss of income are eating less than before or opting for cheaper food ($p < 0.001$) (Table 2). No association was found between the caries perception of parents and changes in food consumption ($p=0.53$).

Regarding their children's oral hygiene, 83.5% of parents reported brushing their children's teeth during the pandemic, 14.7% brushed sometimes and only 1.8% did not brush. There was no significant

association between brushing the teeth and the variables tooth pain, presence of dental caries and change in dietary pattern.

Regarding oral health, 24.4% of parents/caregivers reported their children were undergoing dental treatment before the pandemic. However, only 17.8% of total respondents are willing to take their children to dental care regardless of the procedure; 66.6% would only seek urgent care, and 15.1% would not seek dental care at all. The frequency of distribution of dental pain reports, the presence of caries lesions and dental trauma are shown in Table 3.

Twenty five people declared their children experienced dental trauma during the pandemic. However, 86% of them did not seek dental care. Association was found among parents/caregivers' willingness to take their children to dental appointments, fear level ($p < 0.001$) (Table 4). When the fear level was assessed, 49.2% of respondents reported a level of fear between 6 and 8, while 16.1% said their fear level is between 9 and 10.

DISCUSSION:

For billions of people across the world, daily life has changed dramatically in the past months. The coronavirus pandemic has required adaptations from adults, youth and children in the way they study, work and interact with others. The new routine may impact family well-being by reducing its income, raising fears, increasing anxiety, stress, and instability (Cotrin, Peloso, Oliveira, & et al., 2020; Ornell et al., 2020. Pini et al., 2020) In the course of the present work, India recorded an increasing number of daily cases of COVID-19, reaching its highest number of new confirmed cases

(54,771) on June 19th. This compelled the extension of stay-at-home orders, social distancing and restrictions, exacerbating the risk of an economic recession.

Financial instability, unemployment, economic crises, social distancing, self-isolation, and potentially life-threatening diseases are impacting people's concerns and mental health around the world (Knipe, Evans, Merchant, Gunnell, & John, 2020). In the present study, over 65% of respondents reported fear levels equal to or higher than 6 when the Likert scale was applied, while 16.1% declared fear levels 9 or 10. Fear is present since the early stages of human development (Papalia & Feldman, 2013). It is a non-pathological emotion, consequence of real or imagined threat (Burnham & Gullone, 1997) and results from risk assessments (Papalia & Feldman, 2013). However, high levels of fear may produce negative health outcomes and ultimately may cause emotional and physical damage, as it impedes people from naturally performing daily activities (Balan, Moise, Moldoveanu, Leordeanu, & Moldoveanu, 2019). A significant association was found between the level of fear, the local number of contaminated and seeking dental care. Families living in areas with higher numbers of COVID-19 cases fear more for safety than those living in less affected areas. It results in greater precaution regarding the seek for dental treatments since parents with higher levels of fear are also those who would either take their children to the dentist only in dental urgencies (66.6%) or would not take them at all (15.1%). The concerns of parents/caregivers regarding COVID-19 may be especially high when it comes to children since its sign and symptoms are not well established at young ages

(Mallineni et al.,2020).Adverse manifestations of COVID-19 have been reported in children, such as the Kawasaki disease-like illness related to the infection by SARS-CoV-2 observed in Europe and the United States(Choi, 2020).However, Ludvigsson (2020) found, in a systematic review, that infected children presented milder symptoms of COVID-19 and also a better prognosis than adults. Studies have shown that people have postponed medical treatments due to the fear of contracting COVID-19,which may increase the risk of serious health issues in the near future (Karacin, Bilgetekin, & Basal,2020; Omarini et al., 2020; Teoh et al., 2020). A similar trend was observed in the present study regarding oral health. About 56% of respondents said they are not leaving their houses to attend to medical or dental appointments, and 86% of those who reported that their children were victims of dental trauma during the pandemic did not seek dental care. Besides that, 24.4% of the children had their dental treatment temporarily suspended. The lack of preventive and curative care may negatively impact the oral health of children all over the country and trigger the need for future publications to address those impacts.

The new routine, work-at-home for parents, remote classes for children and economic instability have contributed to changes in dietary habits (Di Renzo et al., 2020). About 77% of respondents said they increased the intake of high-carb foods. Pietrobelli et al. (2020) correlated the social distancing period to the summer vacation, when children's carbohydrate intake considerably increases, with a direct impact on childhood obesity. Families with drastic or total income loss reported eating less or

choosing cheaper foods during the pandemic.

CONCLUSIONS:

During the pandemic, most of the families have changed their daily life routine and eating habits. Parents fear COVID-19 and it impacts their behaviour regarding seeking dental care for their children.

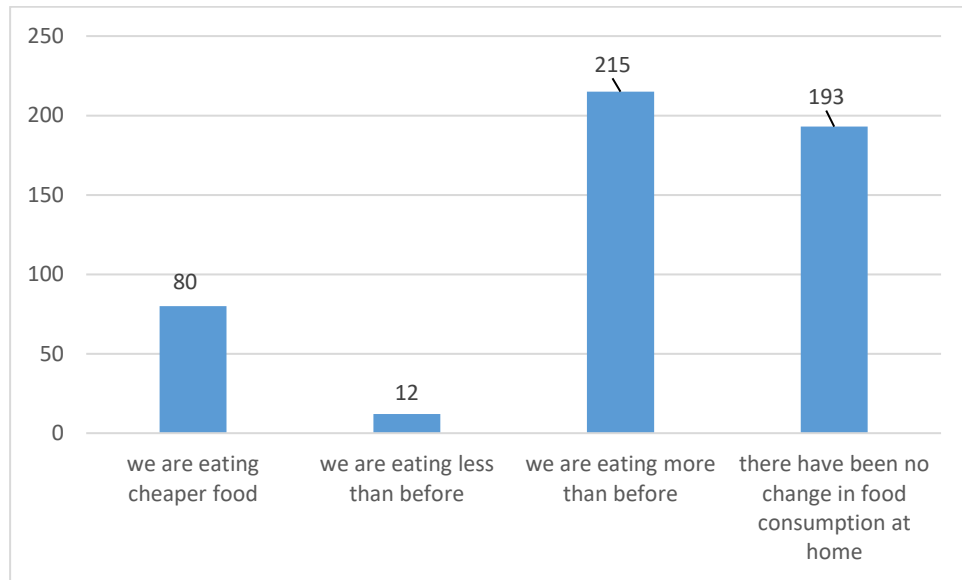


Fig: 1. Changes in eating habits during the pandemic

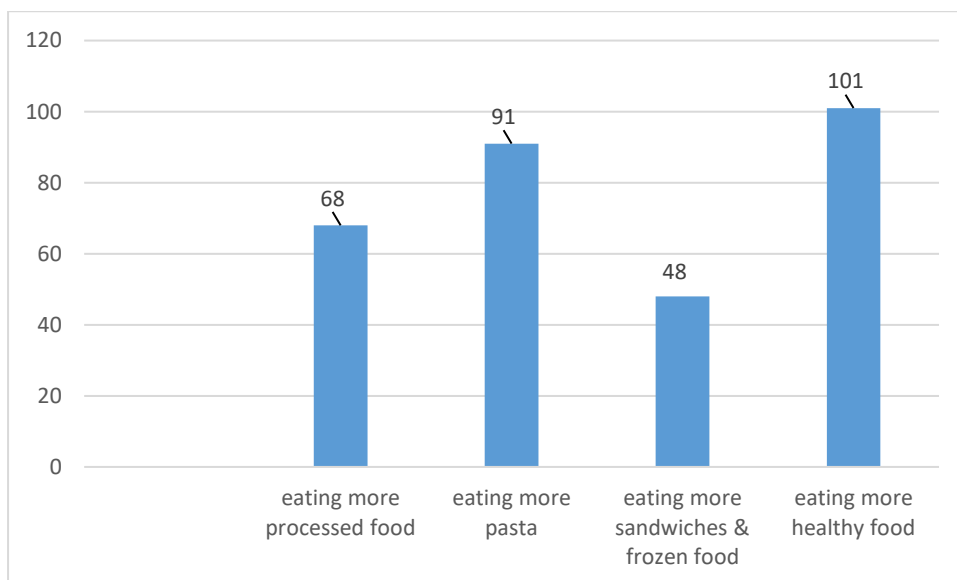


Fig: 2. Changes in food intake during the pandemic

Table 2: Association between eating habits and income during the pandemic in families with children aged 0–12years (n=500).

Income	Food intake pattern				p-value
	Eating cheaper foods n (%)	Eating less than before n (%)	Eating more than before n (%)	no change in food intake n (%)	
Not impacted	10(12.6)	0(0)	64(29.7)	55(28.7)	<0.001
Slightly reduced	38(47.2)	6(52.0)	115(53.7)	105(54.6)	
Drastically reduced	28(34.6)	4(32.0)	33(15.2)	29(14.8)	
Total loss	31(3.8)	2(16.0)	2(0.8)	2(0.9)	
Increased	1(1.9)	0(0.0)	1(0.6)	2(1.0)	
Total	80	12	215	193	

Table 3: Distribution of parents' report regarding dental trauma, their perception of caries and dental pain in children aged 0–12 years. (n=500).

	No n (%)	Yes, I sought care and we were assisted n (%)	Yes, but I did not seek care n (%)	Yes, I sought care and we were not assisted n (%)
Pain	470(93.9)	17(3.4)	12 (2.2)	1(0.5)
Trauma	469(93.8)	8(1.7)	22(4.4)	1(0.1)
Caries	451(90.1)	22(4.4)	24(4.6)	5(1.0)

Table 4: Association between parent’s willingness to take their children to dental appointments during the pandemic & fear levels. India, (n=500)

Would you take your child to a dental appointment during the pandemic?				
Fear score	Yes, for any procedure n (%)	Yes, but only for urgent treatments n (%)	No n (%)	p-value
0-2	17 (19.6)	12 (3.7)	4 (5.7)	<0.001
3-5	36 (41.3)	87 (26.0)	15 (19.8)	
6-8	33 (37.4)	178 (53.2)	36 (45.6)	
9-10	2 (1.7)	57 (17.0)	23 (28.8)	
Total	88	334	78	

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