

Parents Attitude Towards Approaching the Paediatric Dentists During COVID-19 Pandemic: A Cross-sectional Study

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ABSTRACT

Introduction: The infection potential of Coronavirus Disease 2019 (COVID-19) is remarkable due to its airborne transmission through droplets and aerosols. Paediatric dental needs were severely compromised during the COVID-19 lockdown period.

Aim: To assess parents' attitudes and concerns towards approaching paediatric dentists during the COVID-19 pandemic.

Materials and Methods: This cross-sectional study was conducted in Department of Paediatric and Preventive Dentistry at Narayana Dental College and Hospital, Nellore, Andhra Pradesh, India, from August 2021 to October 2021. The study included 200 parents to assess the attitudes and concerns towards approaching Paediatric dentists during the COVID-19 pandemic. A structured questionnaire was used through Google forms to collect from parents, information regarding precautions, mode of transmission of the virus and type of treatment option. The Chi-square test and Fischer-exact test were used to compare

the parameters such as education and occupation with parents' attitude and knowledge.

Results: Out of the 200 parents, 37 were males and 163 were females with mean age of the parents was 34.8 years. Out of total 200, 153 (76.5%) of the parents were worried to visit a Paediatric dentist. Only 56 (28%) of the children suffered from toothache during the pandemic. About 28 (14%) of parents believed that the virus is transmitted through the air and 70% of the parents preferred teledentistry. A 152 (76%) of them were willing to pay extra costs and 123 (61.5%) of respondents expected to treat the emergency condition alone. A statistically significant difference was not observed between different occupation in the answers given about transmission paths of a virus (p -value=0.39), extra payment (p -value=0.77), and preference of approach (p -value=0.223).

Conclusion: Majority parents were worried to visit a Paediatric dentist and preferred teledentistry. They were ready to pay extra costs for the sanitisation.

Keywords: Coronavirus disease 2019, Cost, Children, Cross infection control, Dental treatment, Teledentistry

INTRODUCTION

The recent novel coronavirus outbreak was first detected in Wuhan city of China in late December of 2019. By the end of November 2021, there have been 261,435,768 confirmed cases of Coronavirus Disease 2019 (COVID-19), including 5,207,634 deaths, globally reported to World Health Organization (WHO) [1,2]. This new pandemic was officially determined by WHO to be a novel coronavirus disease caused by the Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) [2]. Where infection rate is concerned, young children seem to be less susceptible to COVID-19 infection than adults. The most common clinical manifestations in children are fever, cough, and shortness of breath followed by headache. Although, the evidence has proved that the children can get COVID-19 like the adults, and Paediatric COVID-19 cases increase gradually in different countries [3-5]. Current investigations have confirmed that SARS-CoV-2 enters cells by binding to the Angiotensin Converting Enzyme-2 (ACE-2) cell receptor and facilitating the internalization of the virus into human cells. This explains the different infection rates between adults and children because of having low ACE-2 expression in children [6-8]. In comparison to adult patients, most of the children diagnosed with the disease experience mild symptoms, faster recovery, shorter detoxification time, and good prognosis [9]. However, a new fatal multisystem inflammatory syndrome which is related to COVID-19 has been found and that is because of over activity of immune system in old children and adolescents, and the number of these atypical cases in Paediatric patients has been increasing since the middle of April 2020 in countries like Europe, Canada, and the United States [10,11].

Children who required dental care were restricted from approaching the Paediatric dentist due to fear of contracting COVID-19 by their parents attitude and also due to the unavailability of emergency dental

services near their residential areas. Most parents missed their child's routine dental visits. It is of utmost importance for Paediatric dentists to know what are their concerns and knowledge regarding the preventive measure and transmission of the virus in the dental environment. Also due to the nature of the dental treatment, the dentist has to work close to the patient and aerosols are produced in many dental procedures. It is reported that the coronavirus can survive in aerosol for three hours, on different surfaces such as plastic and stainless steel, it can survive for two to three days, albeit in small amounts [12]. So, the main goal of the Paediatric dentist is to prevent transmission of the virus from patients and dental health care professionals.

To prevent the transmission of the disease to other patients and health care personnel every Paediatric patient should be handled as potential as COVID-19 positive and maximum Personal Protective Equipment (PPE) should be used [13,14]. Usually, Filtering Face Masks (FFP2) OR FFP3, face shields, double gloves, waterproof disposable gowns should be used. It is evident that the more positive is the parents' attitudes, the better will be the oral health of their children [15]. Henceforth, parental education and provision of preventive measures for maintenance of oral hygiene are preferred options during COVID-19 for Paediatric patients. Since, the literature is scarce about the COVID-19 and parents, the produced study was conducted to understand parents' needs and concerns regarding the treatment during the COVID-19 pandemic.

MATERIALS AND METHODS

This cross-sectional study was conducted in Department of Paediatric and Preventive Dentistry at Narayana Dental College and hospital, Nellore, Andhra Pradesh, India, from August 2021 to October 2021. The Institutional Ethical Committee Clearance was obtained (IEC/NDCH/2021/OCT-NOV/P-20).

Inclusion and Exclusion criteria: Participants who were parents of paediatric patients, who have mobile phones with internet and WhatsApp access and were willing to participate in the study were included in the study. Paediatric patients who were having systemic diseases were excluded from the study because their parents might have worried about dental treatments and also parents who had basic mobile where WhatsApp and email could not be accessed were excluded.

Sample size calculation: A pilot study was conducted among 30 parents who visited Paediatrics department at Narayana medical hospital. The sample size was estimated based on the perception of the parent to visit a dentist during COVID-19 and these 30 participants were not included in the main study. The sample size was estimated using the formula:

$$4PQ/L^2$$

$$P=86$$

$$Q=14$$

P is prevalence

Q is 1-P

L is least allowable error

The overall sample achieved was 193 and was rounded to 200 to avoid attrition.

Questionnaire

A questionnaire was developed based on COVID-19 pandemic, to obtain information about the various aspects of parents' concerns on visiting dentists, the transmission of the virus in dental clinic, precautions they take and expect the Paediatric dentist to take and their expectations regarding the sanitization. The questions were validated by four experts (two Paediatric dentists, one community dentist, one Biostatistician) before the study to assess the content adequacy of the questionnaire and how clear the statement of the items was and pilot tested to assess clarity. The questions were evaluated based on the comments made by these experts the final version of the questionnaire was designed as 13 questions including demographic information. The questionnaire initially was designed was first given to 20 individuals parents to determine whether the questions were clear and understandable. After the completion of each questionnaire it was asked if there were any questions or difficulties encountered while completing it and parents' commented on the questionnaire. Then, questionnaire in the Google form was circulated to the parents through mail and WhatsApp [Annexure-1].

STATISTICAL ANALYSIS

The data was collected using google forms and was entered in to Microsoft Excel 2010. The Statistical Package for Social Sciences (SPSS) version 25.0 was used to analyse all statistical data. Chi-square test and Fischer-exact test were used to compare the parameters like education and occupation with parents' attitude and knowledge. The Chi-square test was used for the values greater than five and Fischer-exact test was performed for the values less than five.

RESULTS

The total number of respondents was 200 parents. Among 200 parents there were 37 males and 163 females, mean age of the parents was 34.8 years. Among them 136 (68%) were graduates, 48 (24%) were postgraduates and only 16 (8%) were matriculated Regarding the occupation of the parents, 82 (41%) were house makers, 72 (36%) were private jobholders, and the rest 26 (13%) and 20 (10%) were in business and health professionals respectively [Table/Fig-1]. In this study, 79.5% of the parents whose children belonged to the age group of 5-8 years were included.

| Demographic details | n (%) |
|---------------------|-----------|
| Education | |
| Graduate | 136 (68%) |
| Post Graduate | 48 (24%) |
| Matriculated | 16 (8%) |
| Occupation | |
| Doctor | 20 (10%) |
| Home maker | 82 (41%) |
| Private job holders | 72 (36%) |
| Business | 26 (13%) |

[Table/Fig-1]: Demographic details.

Out of total 200, 153 (76.5%) 76.5% of parents were worried to visit the Paediatric dentist during the COVID-19 period. During this pandemic majority of the children that was 72% did not experience any toothache and 28% had experienced a toothache [Table/Fig-2].

| Questions related to attitude | n (%) |
|--|-------------|
| Are you worried to visit a paediatric dentist during COVID-19? | |
| Yes | 153 (76.5%) |
| No | 47 (23.5%) |
| Did your child experienced tooth ache during the COVID-19 pandemic? | |
| Yes | 56 (28%) |
| No | 144 (72%) |
| If yes, did you try any home remedies to avoid visiting a paediatric dentist, did it subside or still prevailing? | |
| Yes | 38 (67.9%) |
| No | 18 (32.1%) |
| What is your concern about transmission of coronavirus in the dental clinic? | |
| Through instruments | 46 (23%) |
| Through paediatric dentist | 72 (36%) |
| Through dental chairs | 54 (27.0%) |
| Through the air | 28 (14%) |
| Do you expect the paediatric dentist to provide all the sanitisation and protection to your child from coronavirus? | |
| Yes | 185 (92.5%) |
| No | 15 (7.5%) |
| If yes, What are the precautions you expect the paediatric dentist to adopt? | |
| Sanitise the dental chair and other objects | 14 (7%) |
| Sterilise the instruments | 18 (9.7%) |
| Fumigation of the room | 34 (18.4%) |
| PPE kit for paediatric dentist | 20 (10.8%) |
| All the above | 99 (53.5%) |
| What are the precautions you took or you are going to take when you are visiting a paediatric dentist- on appointment basis or waited in the reception? | |
| Mouth mask | 75 (37.5%) |
| Sanitiser | 56 (28%) |
| Faceshield | 65 (32.5%) |
| Gloves | 4 (2%) |
| Would you like if the paediatric dentist charge extra for these precautionary measures during COVID-19? | |
| Yes | 152 (76%) |
| No | 48 (24%) |
| How would you prefer to approach your dentist? | |
| Through a phone call | 112 (56%) |
| Video call | 28 (14%) |
| In person | 60 (30%) |
| What would you like paediatric dentist to suggest? | |
| To treat the condition | 130 (65%) |
| To prescribe medications | 70 (35%) |

| Would you like the paediatric dentist to treat the emergency condition alone or all dental problems? | |
|--|-------------|
| Emergency condition alone | 123 (61.5%) |
| All dental conditions | 77 (38.5%) |

[Table/Fig-2]: Distribution of study population based on their attitude towards dental treatment during COVID-19.

Homemakers were highly worried (81.7%) to visit paediatric dentist during COVID-19 when compared to private job holders (79.2%), business (73.1%), doctors (50%) and statistically significant difference was observed (p -value=0.02) [Table/Fig-3].

Parents who passed 10th class (61.5%) used home remedies to avoid visiting a paediatric dentist when compared to post graduates and graduates which was statistically significant (p -value<0.001). Matriculated parents (75%) believed that transmission occurred through the dental chair which was statistically significant

(p -value=0.002) when compared with graduate and post graduate parents. Most of the matriculated parents (56.3%) agreed to meet the paediatric dentist in person compared to graduates and post graduates which was statistically significant (p -value=0.007). When compared to graduates and postgraduates most of matriculated parents (93.8%) opted to get treated the condition compared to medication which was statistically significant (p -value=0.03) [Table/Fig-4].

DISCUSSION

Regarding the concern about visiting the dental clinic, the majority (76.5%) of the parents were worried to visit a dental clinic during the COVID-19 pandemic. The current study results were inconsistent with a previous study [16-18] which concluded that the majority of the parents were willing to take their children to the dentist during this pandemic.

| Questions related to attitude | Doctor | Home maker | Private job | Business | χ^2 value | p-value |
|--|----------|------------|-------------|------------|----------------|---------|
| Are you worried to visit a paediatric dentist during COVID-19? | | | | | | |
| Yes | 10 (50%) | 67 (81.7%) | 57 (79.2%) | 19 (73.1%) | 9.5 | 0.02* |
| No | 10 (50%) | 15 (18.3%) | 15 (20.8%) | 7 (26.9%) | | |
| Did your child experienced tooth ache during the COVID-19 pandemic? | | | | | | |
| Yes | 3 (15%) | 29 (35.4%) | 19 (26.4%) | 5 (19.2%) | 4.97 | 0.199 |
| No | 17 (85%) | 53 (64.6%) | 53 (73.6%) | 21 (80.8%) | | |
| If yes, did you try any home remedies to avoid visiting a paediatric dentist? | | | | | | |
| Yes | 1 (5%) | 21 (25.6%) | 16 (22.2%) | 8 (26.9%) | 4.22 | 0.223 |
| No | 14 (70%) | 52 (68.3%) | 43 (59.7%) | 14 (53.8%) | | |
| What is your concern about transmission of Coronavirus in the dental clinic? | | | | | | |
| Through instruments | 5 (25%) | 20 (24.4%) | 15 (20.8%) | 6 (23.1%) | 9.49 | 0.39 |
| Through paediatric dentist | 1 (5%) | 9 (11%) | 14 (19.4%) | 4 (15.4%) | | |
| Through dental chairs | 5 (25%) | 23 (38.9%) | 15 (20.8%) | 11 (42.3%) | | |
| Through the air | 9 (45%) | 30 (26.6%) | 28 (38.9%) | 5 (19.2%) | | |
| Do you expect the paediatric dentist to provide all the sanitisation and protection to your child from coronavirus? | | | | | | |
| Yes | 18 (90%) | 77 (93.9%) | 65 (90.3%) | 25 (96.2%) | 1.43 | 0.72 |
| No | 2 (10%) | 5 (6.1%) | 7 (9.7%) | 1 (3.8%) | | |
| If yes, What are the precautions you expect the paediatric dentist to adopt? | | | | | | |
| Sanitise the dental chair and other objects | 1 (5%) | 6 (7.3%) | 4 (5.6%) | 3 (11.5%) | 21.6 | 0.12 |
| Sterilize the instruments | 1 (5%) | 7 (8.5%) | 9 (12.5%) | 2 (7.7%) | | |
| Fumigation of the room | 6 (30%) | 15 (18.3%) | 11 (15.3%) | 8 (30.8%) | | |
| PPE kit for paediatric dentist | 1 (5%) | 8 (9.8%) | 7 (9.7%) | 5 (19.2%) | | |
| All the above | 11 (55%) | 46 (56.1%) | 41 (56.9%) | 8 (30.8%) | | |
| What are the precautions you took or you are going to take when you are visiting a paediatric dentist? | | | | | | |
| Mouth mask | 8 (40%) | 32 (39%) | 29 (40.3%) | 6 (23.1%) | 6.77 | 0.661 |
| Sanitiser | 3 (15%) | 26 (31.7%) | 19 (26.4%) | 8 (30.8%) | | |
| Face shield | 8 (40%) | 23 (28%) | 23 (31.9%) | 11 (42.3%) | | |
| Gloves | 1 (5%) | 1 (1.2%) | 1 (1.4%) | 1 (2.0%) | | |
| Would you like if the paediatric dentist charge extra for these precautionary measures during COVID-19? | | | | | | |
| Yes | 15 (75%) | 61 (74.4%) | 54 (75.0%) | 22 (84.6%) | 1.22 | 0.77 |
| No | 5 (25%) | 21 (25.6%) | 18 (25%) | 4 (15.4%) | | |
| How would you prefer to approach your dentist? | | | | | | |
| Through phone call | 3 (15%) | 12 (14.6%) | 21 (16.7%) | 1 (3.8%) | 8.3 | 0.223 |
| Video call | 14 (70%) | 40 (48.8%) | 39 (54.2%) | 19 (73.1%) | | |
| In person | 3 (15%) | 30 (36.6%) | 21 (29.2%) | 6 (23.1%) | | |
| What would you like paediatric dentist to suggest? | | | | | | |
| To treat the condition | 11 (55%) | 56 (68.3%) | 45 (62.5%) | 18 (69.2%) | 1.67 | 0.643 |
| To prescribe medications | 9 (45%) | 26 (31.7%) | 27 (37.5%) | 8 (30.8%) | | |
| Would you like the paediatric dentist to treat the emergency condition alone or all dental problems? | | | | | | |
| Emergency condition alone | 16 (80%) | 51 (62.2%) | 40 (55.6%) | 16 (61.5%) | 3.98 | 0.263 |
| All dental conditions | 4 (20%) | 31 (37.8%) | 32 (44.4%) | 10 (38.5%) | | |

[Table/Fig-3]: Comparison of attitude of study population based on occupation.

| Questions related to attitude | Graduate | Post graduate | Matriculated | χ^2 value | p-value |
|--|-------------|---------------|--------------|----------------|---------|
| Are you worried to visit a paediatric dentist during COVID-19? | | | | | |
| Yes | 106 (77.9%) | 33 (68.8%) | 14 (87.5%) | 2.82 | 0.242 |
| No | 30 (22.1%) | 15 (31.3%) | 2 (12.5%) | | |
| Did your child experienced tooth ache during the COVID-19 pandemic? | | | | | |
| Yes | 41 (30.1%) | 9 (18.8%) | 6 (37.5%) | 3.06 | 0.198 |
| No | 95 (69.9%) | 39 (81.3%) | 10 (62.5%) | | |
| If yes, did you try any home remedies to avoid visiting a paediatric dentist? | | | | | |
| Yes | 37 (32.2%) | 1 (2.4%) | 8 (61.5%) | 21.9 | <0.001* |
| No | 78 (67.8%) | 40 (97.6%) | 5 (38.5%) | | |
| What is your concern about transmission of coronavirus in the dental clinic? | | | | | |
| Through instruments | 30 (22.1%) | 15 (31.3%) | 1 (6.3%) | 21.3 | 0.002* |
| Through paediatric dentist | 21 (15.4%) | 6 (12.5%) | 1 (6.3%) | | |
| Through dental chairs | 46 (33.8%) | 6 (12.5%) | 12 (75%) | | |
| Through the air | 39 (28.7%) | 21 (43.8%) | 2 (12.5%) | | |
| Do you expect the paediatric dentist to provide all the sanitisation and protection to your child from coronavirus? | | | | | |
| Yes | 124 (91.2%) | 45 (93.8%) | 15 (93.7%) | 1.75 | 0.567 |
| No | 12 (8.8%) | 3 (6.3%) | 1 (6.25%) | | |
| If yes, What are the precautions you expect the paediatric dentist to adopt? | | | | | |
| Sanitise the dental chair and other objects | 9 (6.6%) | 2 (4.2%) | 3 (18.8%) | 13.3 | 0.206 |
| Sterilize the instruments | 14 (10.3%) | 4 (8.3%) | 1 (6.3%) | | |
| Fumigation of the room | 32 (23.5%) | 7 (14.6%) | 1 (6.3%) | | |
| PPE kit for paediatric dentist | 17 (12.5%) | 4 (8.3%) | 0 (0%) | | |
| All the above | 64 (47.1%) | 31 (64.6%) | 11 (68.8%) | | |
| What are the precautions you took or you are going to take when you are visiting a paediatric dentist? | | | | | |
| Mouth mask | 44 (32.4%) | 18 (37.5%) | 13 (81.3%) | 15.1 | 0.025* |
| Sanitiser | 43 (31.6%) | 12 (25%) | 1 (6.3%) | | |
| Face shield | 46 (33.8%) | 17 (35.4%) | 2 (12.5%) | | |
| Gloves | 3 (2.2%) | 1 (2.1%) | 0 (0%) | | |
| Would you like if the paediatric dentist charge extra for these precautionary measures during COVID-19? | | | | | |
| Yes | 106 (77.9%) | 36 (75%) | 10 (62.5%) | 1.91 | 0.361 |
| No | 30 (22.1%) | 12 (25%) | 6 (37.5%) | | |
| How would you prefer to approach your dentist? | | | | | |
| Through phone call | 87 (64.0%) | 20 (41.7%) | 5 (31.3%) | 13.9 | 0.007* |
| Video call | 15 (11.0%) | 11 (22.9%) | 2 (12.5%) | | |
| In person | 34 (25%) | 17 (35.4%) | 9 (56.3%) | | |
| What would you like paediatric dentist to suggest? | | | | | |
| To treat the condition | 84 (61.8%) | 31 (64.6%) | 15 (93.8%) | 6.44 | 0.03* |
| To prescribe medications | 52 (38.2%) | 17 (35.4%) | 1 (6.3%) | | |
| Would you like the paediatric dentist to treat the emergency condition alone or all dental problems? | | | | | |
| Emergency condition alone | 84 (61.8%) | 31 (64.6%) | 8 (50%) | 1.09 | 0.612 |
| all dental conditions | 52 (38.2%) | 17 (35.4%) | 8 (50%) | | |

[Table/Fig-4]: Comparison of attitude of study population based on education.

*p-value<0.05 was considered as statistically significant

Concerning the child who experienced toothache during the pandemic, the present study shows that only 28% of them experienced dental pain. Among them, 67.9% tried home remedies. It may be due to increased awareness to prevent a dental visit and also consuming a healthy diet during the lockdown and time present due to not having schools. This is congruent with other study [19,20] where it was found that most of the parents took extra efforts to maintain their child's oral hygiene. Parents increased their child's brushing frequency, added mouthwash, flossing, and decreased the frequency of cariogenic diet as new oral health practices for better protection of their child's oral hygiene during the lockdown period in COVID-19 pandemic. On the other hand caries could have increased due to prolonged screen dependency and frequent snacking increased the chances of caries activity [21].

In terms of the transmission of the virus, parents opinionated that virus is transmitted through the air (14%) followed by dental chairs (27%), Instruments (23%), and dentists (36%) in this study. When parents' occupation was compared with knowledge of transmission there was no significant difference was observed. These findings were in contradiction with other study [18] where the parents believed the transmission is through instruments followed by droplets of the blood and the dentist. This disparity of results may be due to misinformation given by social network [22].

Concerning sanitisation and protection, in the present study majority (92.5%) of the parents expected the Paediatric dentist to provide proper sanitization before the treatment. The precautions parents anticipated from dentists were the Provision of a PPE kit, fumigation of the room, sterilisation of the instruments, sanitizing the dental chair. When parents

| Author's name and year | Place of study | Number of subjects | Population considered | Parameters compared | Conclusion |
|-------------------------|-----------------------|--------------------|-----------------------|--|--|
| Sharma P et al., [24] | Haryana, India, | 800 | Parents | Concern on visiting dentist | All respondents were concerned about COVID-19 and most of them had talked about it with their children often. In addition, a considerable percentage of them showed apprehensions about the preventive measures being taken at the dental operator and thought that the dental environment could be more dangerous than other environments. |
| Surme K et al., [17] | Turkey | 250 | Parents | Transmission pathway, precautions to prevent the transmission. | There were differences in the knowledge and attitudes of parents during pandemic according to their education level. |
| Sun tunc E et al., [25] | Turkey | 273 | Parents | Precautions to prevent the transmission | Prevalence of self-medication practices for children's dental problems was high in Turkey during the COVID-19 pandemic. Therefore, new healthcare services, such as teledentistry, may be useful to overcome problems related to the self-medication of children during times when the ability to reach healthcare providers is limited, such as during pandemics. |
| Present study | Andhra Pradesh, India | 200 | Parents | Parents Concern, transmission knowledge, home remedies tried, precautions taken and expected, Type of approach preferred. Education level and occupations were compared. | Parents had good knowledge regarding the transmission path of Coronavirus. Majority of the parents had information about the COVID-19 pandemic. |

[Table/Fig-5]: Similar published studies [17,24,25].

approached dentists they believed that wearing mouth masks (37.5%) and face shields (32.5%) can give protection from the coronavirus. This results were similar with other study where Surme K et al., concluded that almost all the parents thought using PPE during dental treatment of their children would make them feel safe [17]. Three fourth of the population agreed to pay extra for the sanitization protocol this might be due to parents' concern regarding their children's oral health as there was no significant difference regarding the level of education. Children may find the PPE attire uncomfortable, and this can affect the consultation and treatment. Children should be made aware of the dentist's appearance when the pre-appointment consultation is provided. It is suggested to have modified PPE kits that use colors, designs, and other appropriate modifications to make them child friendly [23,24].

In this study, many parents (56%) opted to consult a dentist through a phone call followed by direct consultation in person. When parents' occupation and preference of approach were compared there was no significant difference found. Similar results were found in a study conducted by Sharma P et al., where it was concluded that parents were more concerned to visit the dentist directly during pandemic [24]. The present study results were inconsistent with a previous study [20], which reported that the parents prefer to contact nearby dental hospitals followed by phone calls. This could be attributed to parents' level of education and socio-economic status.

In the current study, regarding the treatment options, 65% of parents preferred the treatment, than medications (35%). However, 61.5% of respondents opted treatment of emergency condition instead of other dental conditions. The present study results were similar to a study by Sen Tunc E et al., where the parents preferred the self medication for their children during pandemic [25]. The present study results are contradicting to a previous study [18] which concluded that the parents preferred only examination followed by extraction procedures and other restorative treatments. The reason might be due to parents motive to relieve their child's distress. Similar studies have been tabulated in [Table/Fig-5] [17,24,25].

In the current study house makers and matriculated parents were more worried to visit paediatric dentist with their child, the reason could be people rely heavily on social media channels such as Facebook and Twitter for the latest news. However, people need to be careful regarding the information that is presented in these and other resources [26]. Most of the matriculated parents tried home remedies. Gargling with salt water, clove oil, gargling with garlic juice and application of cryotherapy are traditional methods used for centuries. The use of natural products for orofacial pain has a

significant empirical effect [27]. In the present study they had less knowledge regarding transmission pathway, precautions to prevent the transmission. These findings were similar to the study done by Surme K et al., [17]. In the present study matriculated parents opted to visit paediatric dentist in person, which this can be attributed to lack of knowledge regarding teledentistry.

COVID-19 is a new disease that infects children of all ages. Paediatric dentists should follow the sanitization protocols and also address the parents' concerns and create awareness of maintaining good oral hygiene practices and diet in the home to prevent the dental visit at these vulnerable times.

Limitation(s)

This online survey could not be used among the parent populations that do not have access to the Internet.

CONCLUSION(S)

In this study 76.5% of the parents were worried to visit a paediatric dentist and most parents had knowledge regarding the transmission of coronavirus. Majority of the parents preferred to approach the dentist through a phone/video call during the COVID-19 pandemic. More studies with larger sample size must be carried out to validate the results of this study

REFERENCES

- [1] World Health Organization (WHO). The Coronavirus disease (COVID-19) pandemic. 2019, <https://covid19.who.int/>.
- [2] World Health Organization (WHO). Naming the coronavirus disease (COVID-19) and the virus that causes it. [https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/naming-the-coronavirus-disease-\(covid-2019\)-and-the-virus-that-causes-it](https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/naming-the-coronavirus-disease-(covid-2019)-and-the-virus-that-causes-it).
- [3] She J, Liu L, Liu W. COVID-19 epidemic: disease characteristics in children. *J Med Virol.* 2020;92(7):747-54. Doi: <https://doi.org/10.1002/jmv.25807>. PMID: 32232980.
- [4] Liguoro I, Pilotto C, Bonanni M, Ferrari ME, Pusiol A, Nocerino A, et al. SARS-COV-2 infection in children and newborns: A systematic review. *Eur J Pediatr.* 2020;179(7):1029-46. Doi: <https://doi.org/10.1007/s00431-020-03684-7>. PMID: 32424745.
- [5] Deville JG, Song E, Ouellette CP. Coronavirus disease 2019 (COVID-19): Clinical manifestations and diagnosis in children. *UpToDate.* Jun 26, 2020. <https://www.uptodate.com/contents/coronavirus-disease-2019-covid-19-clinical-features>.
- [6] Patel AB, Verma A. Nasal ACE2 levels and COVID-19 in children. *JAMA.* 2020;323(23):2386-87. Doi: <https://doi.org/10.1001/jama.2020.8946>. PMID: 32432681.
- [7] Zhou P, Yang XL, Wang XG, Hu B, Zhang L, Zhang W, et al. A pneumonia outbreak associated with a new coronavirus of probable bat origin. *Nature.* 2020;579(7798):270-73. Doi: <https://doi.org/10.1038/s41586-020-2012-7>. PMID: 32015507.
- [8] Bunyavanich S, Do A, Vicencio A. Nasal gene expression of angiotensin-converting enzyme 2 in children and adults. *JAMA.* 2020;323(23):2427-29. Doi: <https://doi.org/10.1001/jama.2020.8707>. PMID: 32432657.
- [9] Centers for Disease Control and Prevention (CDC). For parents: Multisystem inflammatory syndrome in children (MIS-C) associated with COVID-19. May 20, 2020. <https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/children/mis-c.html>.

- [10] Son MB, Friedman K. Coronavirus disease 2019 (COVID-19): Multisystem inflammatory syndrome in children. Up to Date. 2020. <https://www.uptodate.com/contents/coronavirus-disease-2019-covid-19-multisystem-inflammatory-syndrome-in-children>.
- [11] Van Doremalen N, Bushmaker T, Morris DH, Holbrook MG, Gamble A, Williamson BN, et al. Aerosol and surface stability of SARS-CoV-2 as compared with SARS-CoV-1. *New England journal of medicine*. 2020;382(16):1564-67. Doi: <https://doi.org/10.1056/NEJMc2004973>. PMID: 32182409.
- [12] Dar-Odeh N, Babkair H, Alnazzawi A, Abu-Hammad S, Abu-Hammad A, Abu-Hammad O. Covid-19 pandemic and challenges of dentistry: Utilization of teledentistry in antimicrobial prescribing and diagnosis of infectious diseases during COVID-19 lockdown. *European Journal of Dentistry*. 2020;14(Suppl 1):S20. Doi: <https://doi.org/10.1055/s-0040-1717159>. PMID: 33032333.
- [13] Ilyas N, Agel M, Mitchell J, Sood S. COVID-19 pandemic: The first wave-an audit and guidance for paediatric dentistry. *Br Dent J*. 2020;228(12):927-31. Doi: <https://doi.org/10.1038/s41415-020-1702-8>. PMID: 32591704.
- [14] Kamolmatyakul S, Saiong S. Oral health knowledge, attitude and practices of parents attending Prince of Songkla University dental hospital. *Int J Health Promot Educ*. 2007;45(4):111-13. Doi: <https://doi.org/10.1080/14635240.2007.10708115>.
- [15] Pietrobelli A, Pecoraro L, Ferruzzi A, Heo M, Faith M, Zoller T, et al. Effects of COVID-19 lockdown on lifestyle behaviors in children with obesity living in Verona, Italy: a longitudinal study. *Obesity*. 2020;28(8):1382-85. Doi: <https://doi.org/10.1002/oby.22861>. PMID: 32352652.
- [16] Spinelli M, Lionetti F, Pastore M, Fasolo M. Parents' stress and children's psychological problems in families facing the COVID-19 outbreak in Italy. *Front Psychol*. 2020;30(8):1713. Doi: <https://doi.org/10.2139/ssrn.3582790>.
- [17] Surme K, Akman H, Akbaydogan LC, Akin M. Evaluation of parents' knowledge and attitudes towards paediatric dental practice during the COVID-19 pandemic. *Oral Health Prev Dent*. 2021;19(1):271-77.
- [18] Goswami M, Grewal M, Garg A. Attitude and practices of parents toward their children's oral health care during COVID-19 pandemic. *J Indian Soc Pedod Prev Dent*. 2021;39(1):22-28. Doi: 10.4103/jisppd.jisppd_478_20. PMID:33885383.
- [19] Wadia R. Transmission routes of COVID-19 in the dental practice. *Br Dent J*. 2020;228(8):595. Doi: <https://doi.org/10.1038/s41415-020-1547-1>.
- [20] Shqair AQ, Pauli LA, Costa VP, Cenci M, Goetts ML. Screen time, dietary patterns and intake of potentially cariogenic food in children: A systematic review. *J Dent*. 2019;86:17-26. Doi: <https://doi.org/10.1016/j.jdent.2019.06.004>. PMID: 31228564.
- [21] Depoux A, Martin S, Karafillakis E, Preet R, Wilder-Smith A, Larson H. The pandemic of social media panic travels faster than the COVID-19 outbreak. *J Travel Med*. 2020;27(3). Doi: <https://doi.org/10.1093/jtm/taaa031>. PMID: 3125413.
- [22] Maru V. The 'new normal' in post-COVID-19 pediatric dental practice. *Int J Paediatr Dent*. 2021;31(4):528-38. Doi: <https://doi.org/10.1111/ipd.12764>. PMID: 34148269.
- [23] Ghai S. Teledentistry during COVID-19 pandemic. *Diabetes Metab Syndr*. 2020;14(5):933-35. Doi: <https://doi.org/10.1016/j.dsx.2020.06.029>. PMID: 32593116.
- [24] Sharma P, Dhawan P, Rajpal S, Bhat A. Knowledge, Attitudes, and perception of parents toward dental treatment of children during the COVID-19 Outbreak. *Int J Clin Paediatr Dent*. 2021;14(5):693-99. Doi: <https://doi.org/10.5005/jp-journals-10005-2041>. PMID: 34934285.
- [25] Sen Tunc E, Aksoy E, Arslan HN, Kaya Z. Evaluation of parents' knowledge, attitudes, and practices regarding self-medication for their children's dental problems during the COVID-19 pandemic: A cross-sectional survey. *BMC Oral Health*. 2021;21(1):01-07. Doi: <https://doi.org/10.1186/s12903-021-01466-7>. PMID: 33673839.
- [26] Lee YH. Supportive Home remedies for orofacial pain during the Coronavirus Disease 2019 pandemic: Their value and limitations. *Int J Dent*. 2022;2022:2005935. Doi: <https://doi.org/10.1155/2022/2005935>. PMID: 35069740.
- [27] Zhou J, Li Z, Meng H, Chang YC, Peng NH, Wei B. Chinese parental awareness of children's COVID-19 protective measures. *Am J Health Behav*. 2021;45(4):657-64. Doi: <https://doi.org/10.5993/AJHB.45.4.5>. PMID: 34340733.

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1. Age / gender:
2. Occupation:
3. Level of education:
4. Age of your child:
5. Are you worried to visit a paediatric dentist during COVID-19?
a) Yes b) No
6. Did your child experienced tooth ache during the COVID-19 pandemic?
a) Yes b) No
If yes, did you try any home remedies to avoid visiting a paediatric dentist?
b) Yes b) No
7. What is your concern about transmission of Coronavirus in the dental clinic?
a) Through instruments
b) Through paediatric dentist
c) Through dental chairs
d) Through the air
8. Do you expect the paediatric dentist to provide all the sanitisation and protection to your child from coronavirus?
a) Yes b) No
If yes, What are the precautions you expect the paediatric dentist to adopt?
a) Sanitise the dental chair and other objects
b) Sterilise the instruments

- c) Fumigation of the room
 - d) PPE kit for paediatric dentist
 - e) All the above
9. What are the precautions you took or you are going to take when you are visiting a paediatric dentist?
- a) Mouth mask
 - b) Sanitiser
 - c) Face shield
 - d) Gloves
10. Would you like if the paediatric dentist charge extra for these precautionary measures during COVID-19?
- a) Yes b) No
11. How would you prefer to approach your dentist?
- a) Through phone call
 - b) Video call
 - c) In person
12. What would you like paediatric dentist to suggest?
- a) To treat the condition
 - b) To prescribe medications
13. Would you like the paediatric dentist to treat the emergency condition alone or all dental problems?
- a) Emergency condition alone
 - b) All dental conditions