

# Maternal Practices towards Dental Treatment of Primary School Children after the Emergence of Covid 19

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## Abstract:-

### ➤ Context

COVID 19 is a highly contagious viral disease. Dental office has garnered a lot of attention as one of the potential sources of SARS-CoV-2 transmission and dissemination. Due to this, the frequency of dental visits among children and their parents have reduced substantially.

### ➤ Aims

To assess maternal practices towards dental treatment of primary school children after the emergence of COVID 19.

### ➤ Settings and Design

A school based cross sectional electronic survey, conducted in various schools in Chalakudy town in Kerala.

### ➤ Methods and Material

The study was conducted among mothers of primary school children, with a sample size of 709. The data were collected using a validated questionnaire comprised of four parts, part A recorded basic demography, part B mothers' knowledge, part C attitude and part D recorded practices towards dental care and impact covid 19 on dental care.

### ➤ Statistical Analysis

Data were analysed using the SPSS version 21. Descriptive measures and chi-square test was conducted separately for each variable. P value was set at < 0.05 level of significance.

### ➤ Results

The findings showed that overall knowledge, attitude and practice (KAP) scores of the mothers revealed 81.3% had good KAP score. Among them 95.5% had adequate knowledge while 93.1% had positive attitude whereas a mere 40.7% was translated into practice.

### ➤ Conclusions

Knowledge of mothers towards dental treatment of primary school children after the emergence of COVID 19 was adequate but the attitude and the practices were not and this probably due to the fear. Expecting similar pandemics in future, standard operating procedure (SOP) which would ensure absolute infection control in a dental clinic and spreading awareness of such SOP's among parents can reduce their apprehensions to get dental treatments for their kids.

**Keywords:-** COVID 19, Primary School Children, Dental Treatment.

**Key Messages:-** Expecting similar pandemics in future, standard operating procedure (SOP) which would ensure absolute infection control in a dental clinics and spreading awareness of such SOP's among parents can reduce their apprehensions to get dental treatments for their kids.

## I. INTRODUCTION

Covid 19, first reported by the WHO on December 31, 2019 in Wuhan, Hubei Province, central China is a highly contagious viral disease.<sup>[1]</sup> It has spread rather quickly all around the world, hitting pandemic proportions and WHO declared the outbreak as global pandemic on March 11, 2020.<sup>[2]</sup> SARS-CoV-2 is the seventh coronavirus to infect humans and is the causative agent for COVID-19.<sup>[3]</sup> This virus belongs to the beta-coronavirus group that also includes MERS-CoV and SARS-CoV.<sup>[4]</sup> Two of these previously identified coronaviruses have been linked to major epidemics in the last two decades: the Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV), emerged in China in 2002–2003, and the Middle East Respiratory Syndrome Coronavirus (MERS-CoV), originated in the Middle East in 2012.<sup>[5]</sup> This present pandemic originated in December 2019 in China and as on 21 October 2021 WHO has reported a total of 241,886,635 confirmed cases of COVID-19, including 4,919,755 deaths globally. In India, there have been 34,127,450 confirmed cases, with 452,811 deaths.<sup>[6]</sup>

Current evidence suggests that, inhalation, ingestion, and direct mucosal contact with saliva droplets are the most common routes for viral transmission. Furthermore, the virus could remain infectious for a long period on hands, objects, or surfaces.<sup>[7,8,9]</sup> Dental services have garnered a lot of attention as one of the numerous potential sources of SARS-CoV-2 transmission and dissemination.<sup>[8]</sup> In response to the COVID – 19 pandemic, the Center for Disease Control and Prevention (CDC) and the World Health Organization (WHO) issued guidelines for dental settings, which have since become the standard for dental healthcare practitioners all around the world. The rules were updated by each country, region, and state based on their infection rates and regional needs. The Dental Council of India (DCI) published a policy for dental clinics, as well as personal safety for doctors, workers and for patients and a classification of dental emergencies.<sup>[10]</sup> Cross contamination during dental appointments is inevitable unless proper safeguards are followed. In spite of covid protocols followed by dental clinics, it was observed that patients still had fear that had a detrimental impact on people's willingness to consult a dentist.<sup>[10,11]</sup> Since, even adults avoid going to the dentist, it's understandable that parents, particularly mothers, who are more protective of their children, avoid taking them to dental clinics.

Very few Studies have been conducted to assess maternal practices towards dental treatment of primary school children after the emergence of covid 19. With this background this study is being conducted with an aim of to assess maternal practices towards dental treatment of primary school children after the emergence of covid 19.

## II. METHODOLOGY

A school based cross sectional electronic survey, conducted in various schools in Chalakudy town in Kerala. Ethical clearance for the study was obtained from institutional review board of \*\*\*\*\*bearing the No IEC (IECKVGDCH/SS02/21-22). Stratified cluster random sampling methodology was employed to draw the required sample. List of schools in the town were obtained through district educational officer, and all schools were invited to participate in the study. However 22 schools were agreed to participate in the study and were included in the sampling frame. The cell phone numbers of the parents were obtained from headmistress/headmaster of the respective schools. Mothers of the school children satisfying the I/E criteria were contacted through phones and invited to participate in the study. Literate mothers accosted to use a smart phone were included in the study. Mothers of children who had visited the dental clinic in last 15 days or mothers of children who were scheduled to visit a dental clinic on the day of filling of questionnaire were excluded from the study.

Necessary data were collected using a validated questionnaire prepared following an extensive literature review. Content validation of the tool was performed by emailing the prepared questionnaire to three experts in the field of pediatrics. Their responses were recorded on a three point Likert scale. Each parameter was assessed for relevance by calculating its Aiken's index<sup>[12]</sup>. Parameters which obtained a score  $\geq 0.6$  were included in the questionnaire. Final questionnaire comprised of two parts, part A recorded basic demography, part B recorded KAP towards dental care and impact covid 19 on dental care. Prepared questionnaire was tested for reliability through translation and back translation methods. Necessary modification were performed and final questionnaire was prepared in both English and local (Malayalam) language. Questionnaire was distributed to the participants through social networking groups created by each schools and responses were collected. Participants were given a weeks time to respond and non respondents were reminded twice over a period of six days.

Data were analysed using the SPSS version 21. Descriptive measures and chi-square test was conducted separately for each variable in order to determine maternal practices towards dental treatment of primary school children after the emergence of covid 19. P value was set at  $< 0.05$  level of significance.

### III. RESULTS

A total of 1280 study subjects satisfying I/E criteria agreed to participate however a total of 709 responded following two reminders ,thus a yielding a response rate(55.3%).

According to the collected sociodemographic data, the majority of the mothers (52.18 %) were between the ages of 25-35years and lived in urban regions (53.73 %). About (85.08 %) of the mothers were graduates, and (40.19% %) were working, with a monthly household income of Rs.25,000 or over (82.22%). Analysis revealed that majority of children were (53.59%)females, and aged (60.08%) 4-9years, with (55.43%) studying in primary school, among which 47.24%were studying in private schools as shown in Table No.1

A analysis of overall knowledge, attitude and practice (KAP) scores of the mothers revealed 81.3% had good knowledge ,attitude, and practice(KAP) score .The mean

KAP score in relation to each sociodemographic parameters were studied and revealed a statistically significant association(p value <0.05) to their education, monthly income, residence ,and type of school of their children as shown in Table No.1

The interpretation of overall (KAP) score and individual scores of knowledge, attitude and practice are shown in Table No.2.The scores obtained were cumulated and dichotomised at 50<sup>th</sup> percentile.

A detailed analysis of knowledge scores in relation to variables studies revealed a statistically significant association for education, monthly family income, residence and type of school. Attitude was significantly associated for education, monthly income and residence. Whereas practices found to be insignificant. Further it was found that 95.5% had adequate knowledge where as 93.1% had positive attitude and 40.7% was translated into favourable practice.

### IV. TABLES

Table No.1 Distribution of study population in relation to the basic demographic characteristics.

Sl.no	Parameters	Frequency	%	KAP Score	P value
1	<b>Age of mother</b>				
	25-35yrs	370	52.18%	12.92±2.16	0.784
	36-45yrs	339	47.8%	12.97± 2.04	
2	<b>Education of mother</b>				
	Primary/middle or high school	127	17.19%	12.33± 2.79	0.000308*
	University or masters	582	82.08%	13.08±1.90	
3	<b>Occupation of mother</b>				
	Working	285	40.19%	13.10±2.02	0.421
	Not working	424	59.80%	12.70± 2.01	
4	<b>Monthly Income of family</b>				
	<25000	126	17.77%	13.250±1.83	0.00113*
	25000-50000	304	42.87%	12.88±2.17	
>50000	279	39.35%	12.43± 2.39		
5	<b>Residence</b>				
	Rural	328	46.26%	12.66±2.31	0.000992*
	Urban	381	53.73%	13.18±1.88	
6	<b>Age of child</b>				
	4-9	426	60.08%	12.83± 2.18	0.0822
	10-14	283	39.91%	13.11± 1.98	
7	<b>Gender of child</b>				
	Male	329	46.40%	12.87±2.17	0.415
	Female	380	53.59%	13.00± 2.05	
8	<b>Class of the child</b>				
	Lower primary	393	55.43%	12.89±2.11	0.441
	Higher primary	316	44.56%	13.01±2.10	
9	<b>Type of school</b>				
	Private	335	47.24%	13.03±1.98	0.00109*
	Aided school	257	36.24%	13.12±1.96	
Government	117	16.50%	12.29±2.59		

\*P value significant, p value set as <0.05

Table No.2 Interpretation of KAP score and individual scores of knowledge, attitude and practice of among studied population.

Sl. No	Parameter	Score (%)
<b>Overall KAP</b>		
1	Poor (3-7)	5(0.70)
2	Fair (8-12)	127(17.91)
3	Good (13-17)	577(81.38)
<b>Knowledge</b>		
1	Inadequate (1-3)	20 (2.8)
2	Adequate (4-7)	688(95.5)
<b>Attitude</b>		
1	Negative (1-3)	49(6.9)
2	Positive (4-7)	660(93.1)
<b>Practice</b>		
1	Unfavourable	420(59.23)
2	Favourable	289(40.7)

Table No.3 An analysis of the Knowledge, Attitude and Practice scores in relation to the maternal practices towards dental treatment of primary school children after the emergence of covid 19.

Sl. no	Parameter	N	Knowledge			Attitude			Practices		
			Inadequate	Adequate	P value	Negative	Positive	P value	Unfavourable	Favourable	P value
1	<b>Education of mother</b>										
	Primary/middle or high school	127	10(7.8%)	117(92.1%)	0.0008*	23(18.1%)	104(81.8%)	0.00001*	73(57.4%)	54(42.5%)	0.73
University or masters	582	10(1.7%)	572(98.2%)	26(4.4%)		556(95.5%)	347(59.6%)		235(40.3%)		
2	<b>Monthly Income of family</b>										
	<25000	126	8(6.3%)	118(93.6%)	0.0211*	16(12.6%)	110(87.3%)	0.00543*	81(64.2%)	45(35.7%)	0.212
	25000-50000	304	8(2.6%)	296(97.3%)		22(7.2%)	282(92.7%)		184(60.5%)	120(39.4%)	
>50000	279	4(1.4%)	275(98.5%)	11(3.9%)		268(96.0%)	155(55.5%)		124(44.4%)		
3	<b>Residence</b>										
	Rural	328	16(4.8%)	312(95.1%)	0.0044*	32(9.7%)	296(90.2%)	0.00873*	198(60.3%)	130(39.6%)	0.624
Urban	381	4(1.0%)	377(98.9%)	17(4.4%)		364(95.5%)	222(58.2%)		159(41.7%)		
4	<b>Type of school</b>										
	Private	335	6(1.7%)	329(98.2%)	0.015*	22(6.5%)	313(93.4%)	0.278	195(58.2%)	140(41.7%)	0.814
	Aided school	257	6(2.3%)	251(97.6%)		15(5.83%)	242(94.1%)		153(59.5%)	104(40.4%)	
Government	117	8(6.8%)	109(93.1%)	12(10.2%)		105(89.7%)	72(61.5%)		45(38.4%)		

\*P value significant, p value set as <0.05

**V. DISCUSSION**

Oral health is a crucial component of overall wellness. Oral diseases are predicted to afflict almost 3.5 billion people, according to the WHO and Primary tooth decay affects more than 530 million children worldwide (milk teeth).<sup>[13]</sup> Dental health has an impact on a child's functional, psychological, and social well-being. Dental caries and periodontal disease have a global impact on children's health<sup>[14,15]</sup> with dental caries being the most common, and

occurring in low-, middle-, and high-income countries around the world, and affecting 60% to 90 % in industrialised countries.<sup>[16]</sup>

The global healthcare system was ravaged by the pandemic brought by the Coronavirus disease (COVID-19)<sup>[10]</sup> COVID-19, which is caused by the coronavirus that causes severe acute respiratory syndrome type 2 (SARS-CoV-2), is assumed to transmit via respiratory droplets and aerosols. Dentistry is hypothesised to be linked to the

nosocomial spread of infection due to certain characteristics of dental care such as aerosol generation and close closeness to patients.<sup>[17]</sup> Children and adolescents under the age of 20 account for 0.4% (almost 12,000) of the 3.4 million COVID-19 fatalities reported in the MPIDR COVERAGE database. Over 12,000 deaths in people under the age of 20 were reported, with 58% occurring among teenagers aged 10-19yrs, and 42 % among toddlers aged 0-9yrs<sup>[18]</sup> These factors directly contribute to the higher level of COVID19-related fear and anxiety among the parents to take up children for dental treatments. It's likely that parents will act in specific ways to protect their children and to alleviate their own fear or anxiety about the perceived threat.<sup>[19]</sup>

In our study we have specifically considered maternal knowledge, attitude and practice because, it is well known that parents' behaviour, particularly that of mothers, has an impact on their children's health. Some characteristics, such as maternal education, occupation, age, current knowledge, attitude, and behaviour, can help them improve their health habits and indirectly their children's health.<sup>[20]</sup> During their early years of life, mothers are the key role models for creating and moulding oral health behaviours in their children. As a result, it is critical for a mother to understand the significance of good oral health practises in children.<sup>[16]</sup>

The overall analysis of the studied population revealed that 81.38% of them had good KAP score. Further analysis on knowledge showed that 95.5% of the population possessed adequate knowledge, 93.09 % had a positive attitude, and only 40.70 % of the knowledge was put into effect. Similarly, a study conducted by Nahid Iftikhar et al found that, even though their child needed therapy, the majority of parents (63.5%) refused to take them to the clinic during the COVID 19 times.<sup>[21]</sup> Ricardo Campagnaro et al also had similar findings, parents are afraid of COVID-19, which has a detrimental impact on their behaviour when it comes to getting dental care for their children.<sup>[22]</sup>

Tooth decay is the most frequent chronic paediatric ailment, five times more common than asthma, according to the United States (US) Centre for Disease Control and Prevention (Atlanta, Georgia, USA).<sup>[23]</sup> So measures have to be taken to tackle the situation especially during this COVID 19 times when parents being protective and scared, tend to avoid dental treatments. The contemporary approach emphasises prevention. As a result, parents should be trained to instil good dental hygiene and food habits in their children at a young age, as well as advise and supervise them in their oral health management and disease prevention, in order to avoid serious illnesses. Children are not allowed to play indoor games during the pandemic, and they are more susceptible to primary or early permanent teeth trauma. Excellent trauma protection and management for children should be known to parents.<sup>[24]</sup> Teledentistry can provide an innovative alternative for resuming dental practise during pandemics.<sup>[25]</sup>

COVID 19 has been on the decline for some time now, but can't claim it is completely vanished from the earth. In addition, the threat of such deadly respiratory infectious

diseases emerging in the future is a near certainty. The results of this study have shown that knowledge of parents is not an issue, but their apprehension to get the treatments done during COVID-19 was, primarily due to the belief among parents that dental clinics could be a major source of infection. So, the onus is on the dentist and the policy makers to set up a standard operating procedure (SOP) which would ensure absolute infection control in a dental clinic and spreading awareness of such SOPs among parents will go a long way in reducing parents' apprehensions to get dental treatments done for their kids during such pandemics in the future.

## VI. CONCLUSION

The results of the study have conclusively shown that knowledge of the mothers towards dental treatment of primary school children after the emergence of COVID 19 was adequate but the attitude and the practices were not. This had mainly to do with the apprehension of parents due to COVID 19. Raising parents' awareness of SOPs will go a long way toward lowering their reluctance to have their children receive dental care during future pandemics.

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