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Influence of COVID 19 on the Oral Habits of Children. - A Questionnaire Study

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Abstract

Aim:

This study aimed to assess parents and dentists' awareness and attitudes regarding changes in children's oral habits since the COVID-19 pandemic.

Materials and Methods:

A questionnaire-based study of parents and dentists was undertaken from June to September 2021. This study was conducted through a well-researched online survey. 247 parents and 257 dentists filled out the questionnaire. The survey asked questions about the changes, the occurrence of new cases, increase or decrease in the frequency of oral habits observed in children since the COVID 19 pandemic. Statistical analysis was performed using SPSS software, including the Independent Chi-square test on the entire data collected.

Results:

According to the data obtained from the dentist's questionnaire, 73% of the dentists believe oral habits should be treated, and 89% of them observed that due to increased levels of anxiety, the frequency of oral habits has also increased. It was also observed that 65% of the oral habit complaints were related to nail-biting. The questionnaire for parents showed that 58.7% of the parents observed nail-biting in their children, which was the highest compared to any other oral habit. 52% of parents have observed an increase in the severity of oral habits since the pandemic.

Conclusion:

The occurrence and frequency of oral habits have increased since the COVID 19 pandemic. Nail-biting is among children's most frequently observed oral habits, followed by thumb/ finger sucking and teeth grinding (Bruxism). It was also observed that children have become more anxious during the pandemic.

Keywords: Oral Habits, Children, India, Parents, Dentists, COVID-19

Introduction

On March 24th 2020, a nationwide lockdown was imposed due to the emergence of the COVID 19 pandemic, restricting the movement of citizens. This has led to the disruption of the daily routine for children and their parents overnight. Due to the rapid spread of the pandemic, emergency laws were enforced, such as social distancing and staying indoors, which has been observed to create a negative impact on the health and behaviour of children.[1] Children are some of the most active people in a population. During the lockdown period, children had to be confined at home, which led to interference with their lifestyle in multiple ways, such as the transition to online-based learning, inability to interact with the outside world (family and friends),

and cessation of outdoor activities. These have led to increased screen time, a change in their sleep schedule, social distancing from working parents, and a fear of the pandemic itself. [2]

Oral habits are learned patterns of muscular contraction and have excellent complex nature. Initially, these are actions consciously done by the infant but later on become unconscious and play a significant role in the growth and development of the child, which is when it is called a habit. There is a widespread prevalence of harmful oral habits in the younger population. A study reported the incidence of thumb sucking as 82% for the 1st five months after birth. Studies have also concluded that digit sucking has had adverse effects on the dentition, as these habits alter the position of the teeth and precede to mal-aligned dentition as well as growth deformities. Moreover, it might negatively affect ones verbal communication. [4] Therefore, these habits should be intervened at an early stage, or else in severe cases, it may lead to orthognathic surgeries in children. [3]

Parents and pedodontists are the two main characters who can diagnose these deleterious habits early and get them treated before it is too late. So this study aims to assess the knowledge and attitudes of dentists as well as parents on oral habits of children and if COVID 19 had any influence on the same.

Materials And Methods

The survey was sent as a web link created using Google Drive along with a text stating the title and the purpose of the study. Parents of children aged between 4- 10 years were included in the study. Children with special health care needs were excluded from the study. No incentives were offered. Data was collected in 4 months, from June 2021 to September 2021. A single investigator sent the link to the respective Whatsapp groups of the concerned participants. The same investigator was responsible for the extraction (web-based data) and storage of the information while protecting the anonymity of the responses. It was a 1-page survey with nineteen questions appearing on one page, thereby facilitating the completion of the form. For the crucial questions, mandatory selection of one response was enforced to contemplate the questionnaire's completeness before submission. Therefore, only complete responses were submitted for further analysis. Adaptive questioning or randomisation of items was not required. Also, no time frame was used to determine the time to fill out the questionnaire.

Ethical Consideration

The ethical approval was obtained from the institutional ethics committee [(IEC/ MRADC & H/ EC- 006/ 2021(Institutional Ethics Committee/ M. R. Ambedkar Dental College and Hospital)]. The ethics committee reviewed and approved this study protocol, participant information sheet (PIS), informed consent form, and the survey questionnaire. All of the study participants were requested to sign the informed consent to confirm their willingness to participate by answering an agree/disagree question. Informed consent included detailed information that was related to the aim and significance of the study so that participants could make an informed choice about whether to participate or withdraw at any time if he/she so wished. The participants who selected the "agree" option were directed to complete the self-administered questionnaire. All of the participants' anonymity was ensured, and no personal identifiers, including names, email IDs, and details of COVID-19 exposure, were collected. Only one response per Internet Protocol (IP) address was allowed.

Questionnaire Design

A cross-sectional questionnaire-based survey consisting of two questionnaires separately for parents and dentists was carried out among the Indian population. The parent's questionnaire had nineteen questions, of which (15) were close-ended, and (3) were open-ended. The Dentists questionnaire had seventeen questions, of which (10) were closed-ended and (6) were open-ended.

Results

247 parents and 257 dentists responded to the questionnaires. The dentist's survey has gathered that; 73% of the dentists believe oral habits should be treated. 87% of dentists take habit history in their day-to-day practice. 80% of the dentists who know the tradition of oral habits in children, have seen an increase in them since the pandemic. 89% of dentists have also seen a rise in anxiety levels. (Refer Graph 1). 78% of the dentists check for habits by their specific oral findings. 86% of dentists treat oral habits themselves. (Table 1). 70.5% of dentists have observed new oral habits in children since the COVID 19 pandemic. The maximum results are

Volume 5, Issue 3; May-June 2022; Page No 110-119

displayed with teeth grinding. (60.5%). Results gathered from the parent's survey are; 71% of parents state that their children have some of the other oral habits out of which, Nail-biting (58%) is the most common followed by finger/ thumb sucking (45%) and mouth breathing (43.7%). (Refer Graph 2). 52% of the parents complain that their children have a habit of grinding their teeth at night but not so intense that it might lead to jaw pain. (Refer Table 3). 56% of the parents have noticed a change in their children's sleep patterns, and they believe it has increased. 55% of the parent's state that their children seem to be more anxious since the pandemic, due to which they also see a change in their children's behaviour. (Refer Table 4). 53% of the parents have noticed new oral habits being formed in children since the pandemic, out of which (47%) complain of teeth grinding added to the regular nail-biting (42%) and thumb/ finger sucking (39%). 52% have also noticed an increase in the intensity of such habits. (Refer Table 4). 62% of the parents would like to visit the dentist after noticing a new oral habit. However, they are not prioritising it due to the fear of contracting COVID. (Refer Table 5)

Discussion

There is a negative impact observed on the oral hygiene routines of children due to the lack of preventive and curative care. [6] Studies have shown that there is a change seen in children's dietary habits, leading to inadequate oral hygiene. Researchers have also noticed a difference in children's behavioural patterns, leading to deleterious oral habits. [4]

A negative impact has been observed, especially on children since the lockdown period, concerning their health, emotional and physical well-being. However, this has also led to the increased time spent with close family, better mutual understanding, and a heightened sense of responsibility in children. Another non-negligible observation is that parents are now more involved in children's day to day activities, which brooks et al. [5] found to be reducing anxiety and stress among children, which is not by this study. [6]

This study observed that nail-biting is the most frequent, followed by finger sucking. This is in accordance to a study done by Pruneda et al. [7] The incidence of tongue thrusting was shown to be rare in this study. The result correlated with the findings of a survey done by Shetty and Munshi [8] among children of Mangalore, but not by studies done Kharbanda et al [9] and Guaba et al [10]. A few studies also state that tongue thrusting is often accompanied by proclination of teeth with open bites and/ crossbites.

A study conducted by Bhayya and Shyagali [11] concluded that the 2nd most prevalent oral habit in children was mouth breathing, which is comparable to the results from the present study (i.e. 37%). 62.3% of the respondents said they wanted to visit the dentist on noticing a new oral habit in their child, of which 38.5% remained at home without consultation due to the fear of being infected by COVID.

Sharma *et al.*, in 2016, [12] carried out a study on knowledge, attitude and practices of paediatricians regarding malocclusion in the state of Haryana, India. They offered multiple questions to paediatricians regarding malocclusion and oral care and discovered that paediatricians' knowledge was inferior. Further, regarding questions referring thumb-sucking patients to the dentist, 70% of paediatricians did not refer a child with digit sucking habit to the dentist.

Quashie-Williams et al. [13] and Kharbanda et al.[9], in their study, respectively, concluded that finger sucking was the most prevalent, but this was not correlating to the results of the current study. The findings of this study state that 86.2% of the children have one or more deleterious oral habits. Whereas lower reports were observed by Kharbanda et al.[9] for children of North India. On the contrary, a study done by Garde et al. [14] showed a prevalence of 51% among the Indian population.

Quashie- Williams et al., [13] in their study, concluded that 34.1% of the children had deleterious oral habits. These varied results of prevalence of oral habits might be explained by different cultural backgrounds, environmental factors, and different age groups for sample size. These few reasons could make a significant impact on the studies.

A majority of the parents who responded to the questionnaire of this study wanted to take their child to the dentist on noticing a new oral habit; a similar result was observed from a study done by Mahesh et al., [15] where he reported 100% awareness among parents about the maintenance of oral hygiene in children. There was a significant difference in

Volume 5, Issue 3; May-June 2022; Page No 110-119

children's sleep duration since the nationwide lockdown was observed through the results of this study. This is in accordance to a survey done by Lim et al. [16]

Conclusion

Oral habits have detrimental effects on the developing dentition, oral functions, and facial aesthetics, if they persist beyond the preschool age. COVID 19 has had a serious impact on children, making them more anxious which leads to an increase in the frequency and occurrence of deleterious oral habits in children. The results of this study warrant a need to educate the parents and children about the deleterious effects produced by such habits on the development of normal occlusion and the importance of timely intervention.

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Volume 5, Issue 3; May-June 2022; Page No 110-119

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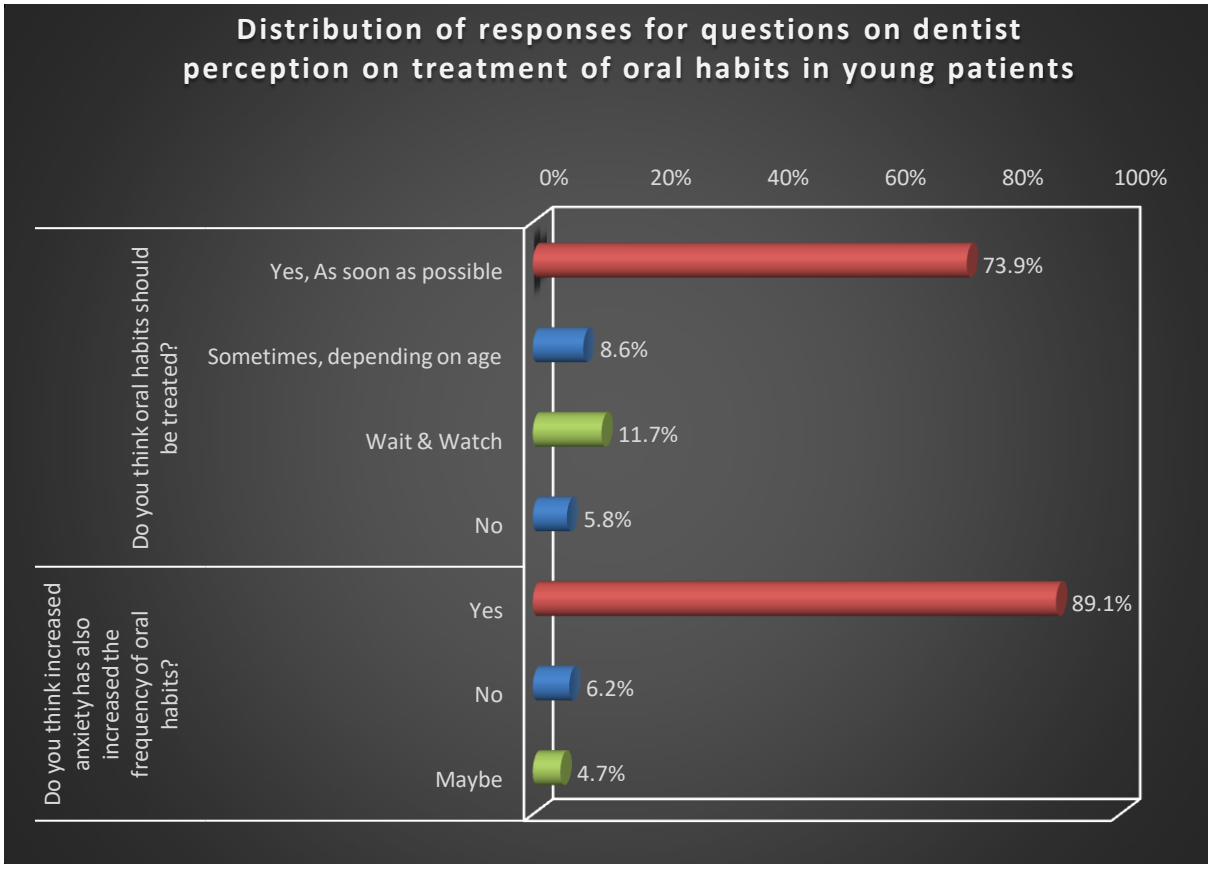
Graph 1



Volume 5, Issue 3; May-June 2022; Page No 110-119

Graph 2

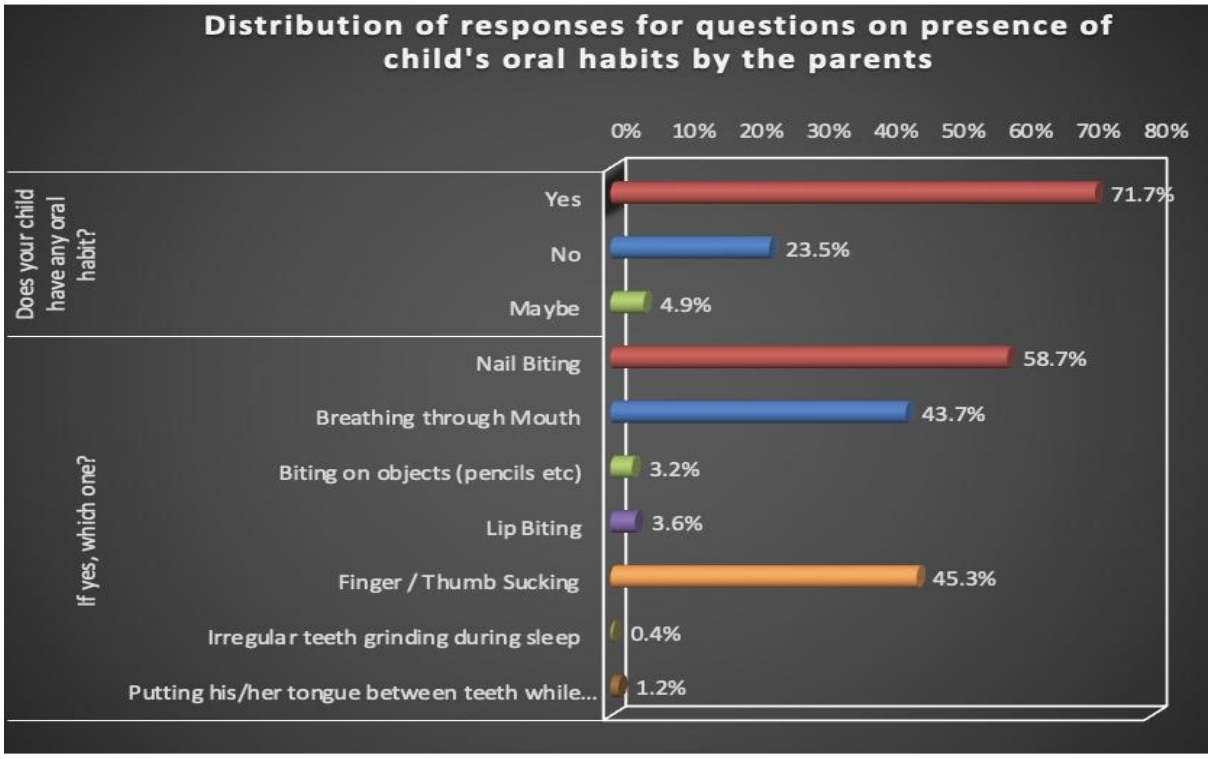


Table 1

Comparison of distribution of responses for questions on dentist perception on young patients' oral habit during COVID Pandemic using Chi Square Test

Questions	Responses	n	%	χ^2 Value	P-Value
Did you notice/ observe any change in the oral habits of young patients since COVID 19 pandemic?	Yes	208	80.9%	192.708	<0.001*
	No	39	15.2%		
	Maybe	10	3.9%		
If yes, then what were the changes observed?	Yes, Oral habits have increased	190	73.9%	133.171	<0.001*
	Yes, Oral habits have decreased	24	9.3%		
	No, did not observe any such changes	43	16.7%		
Do you treat young patients with oral habits?	Yes, I treat them	221	86.0%	20.735	<0.001*
	No, I refer them to specialist	36	14.0%		
How do you check for oral	Oral findings of	201	78.2%	235.735	<0.001*

Volume 5, Issue 3; May-June 2022; Page No 110-119

habits in young patients?	specific habits				
	Clinical manifestations of specific oral habits	39	15.2%		
	Don't check for such findings	17	6.6%		

Table 2

Comparison of distribution of responses for questions on dentist perception on impact of COVID 19 pandemic on young patients' oral habits using Chi Square Test

Questions	Responses	n	%	χ^2 Value	P-Value
Did you observe clinical signs/ symptoms of oral habits in any child patient since the COVID 19 pandemic?	Yes	204	79.4%	245.237	<0.001*
	No	28	10.9%		
	Sometimes	25	9.7%		
If yes, which all oral habits have you observed?	Digit Sucking	109	42.4%	..	..
	Mouth Breathing	107	41.6%	..	..
	Nail Biting	107	41.6%	..	..
	Tongue Thrusting	22	8.6%	..	..
	Teeth Grinding	150	58.4%	..	..
	Lip Biting	16	6.2%	..	..
Did any parent come with a history of teeth grinding in their child/ children since the COVID 19 pandemic?	Yes	205	79.8%	91.086	<0.001*
	No	52	20.2%		
Did any parent come with a complaint of oral habit history since COVID 19 pandemic?	Yes	205	79.8%	251.237	<0.001*
	No	35	13.6%		
	Sometimes	17	6.6%		
If yes, which among these;	Finger/ Thumb sucking	100	38.9%	..	..
	Mouth breathing	102	39.7%	..	..
	Tongue Thrusting	6	2.3%	..	..

Volume 5, Issue 3; May-June 2022; Page No 110-119

Comparison of distribution of responses for questions on dentist perception on impact of COVID 19 pandemic on young patients' oral habits using Chi Square Test					
Questions	Responses	n	%	χ^2 Value	P-Value
	Nail Biting	110	42.8%	..	..
	Teeth grinding	149	58.0%	..	..
	Lip Biting	12	4.7%	..	..
Have you seen a change in the habits of patients, with prior history of oral habits, especially since COVID 19?	Yes	204	79.4%	246.171	<0.001*
	No	33	12.8%		
	Sometimes	20	7.8%		

Table 3

Comparison of distribution of responses for questions on history relating to child's oral habits using Chi Square Test					
Questions	Responses	n	%	χ^2 Value	P-Value
Did you ever consult a dentist regarding "teeth straightening treatment" for your child?	Yes	116	47.0%	0.911	0.34
	No	131	53.0%		
Does your child frequently have a running nose/ fever/ cold?	Yes	26	10.5%	153.947	<0.001*
	No	221	89.5%		
Does your child frequently suffer from swollen tonsils?	Yes	20	8.1%	173.478	<0.001*
	No	227	91.9%		
Does your child have a habit of grinding his/her teeth at night?	Yes	129	52.2%	61.538	<0.001*
	No	89	36.0%		
	Maybe	29	11.7%		
Does your child have jaw pain in the morning?	Yes	50	20.2%	87.486	<0.001*
	No	197	79.8%		
Does your child generally have sleep disturbances?	Yes	31	12.6%	236.121	<0.001*
	No	196	79.4%		
	Maybe	20	8.1%		

Volume 5, Issue 3; May-June 2022; Page No 110-119

Table 4

Comparison of distribution of responses for questions on Impact of COVID 19 on child's oral habits using Chi Square Test					
Questions	Responses	n	%	χ^2 Value	P-Value
During COVID 19, has the sleep pattern of your child/ children changed?	Increased	140	56.7%	100.429	<0.001*
	Decreased	13	5.3%		
	No Change	94	38.1%		
Is your child generally agitated, anxious or fearful?	Yes	24	9.7%	166.211	<0.001*
	No	177	71.7%		
	Sometimes	46	18.6%		
Has your child's anxiety level increased since the COVID 19 Pandemic?	Yes	136	55.1%	55.684	<0.001*
	No	67	27.1%		
	Maybe	44	17.8%		
Do you see any changes in your child's behaviour since the COVID 19 pandemic?	Yes	143	57.9%	88.915	<0.001*
	No	82	33.2%		
	Maybe	22	8.9%		
Has your child developed any new oral habits since the COVID 19 pandemic?	Yes	132	53.4%	86.777	<0.001*
	No	99	40.1%		
	Maybe	16	6.5%		
If yes, can you tell which amongst these;	Finger/ Thumb sucking	97	39.3%	..	..
	Mouth Breathing	98	39.7%	..	..
	Nail Biting	104	42.1%	..	..
	Lip Biting	15	6.1%	..	..
	Irregular Teeth Grinding	116	47.0%	..	..
If any of the above mentioned habits hold true for your child, did the severity increase during the COVID 19 pandemic period?	Yes	130	52.6%	75.555	<0.001*
	No	96	38.9%		
	Maybe	21	8.5%		

Volume 5, Issue 3; May-June 2022; Page No 110-119

Table 5

Comparison of distribution of responses for questions on parent's perception on child's new oral habit using Chi Square Test					
Questions	Responses	n	%	χ^2 Value	P-Value
When does your child perform his/her oral habits in the day?	Morning	21	8.5%	68.891	<0.001*
	Night	26	10.5%		
	Throughout the day	90	36.4%		
	Only when stressed	68	27.5%		
	While doing some other activities	42	17.0%		
On noticing a new oral habit in your child, would you visit the dentist?	Yes	154	62.3%	15.605	<0.001*
	No	93	37.7%		
If not, then why?	It is not a matter of concern	119	48.2%	142.36	<0.001*
	Fear of getting infected with COVID	95	38.5%		
	No oral habits seen	4	1.6%		
	Home remedies / counselling	29	11.7%		

Volume 5, Issue 3; May-June 2022; Page No 110-119