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Reasons for Tooth Extractions in Indian Children During the COVID-19 National Lockdown

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ABSTRACT
Several issues emerged due to the pandemic lockdown, such as tooth pain and missed oral care needs. For children, these problems had a big impact on their quality of life when it came to their oral health. So, the main goal of this study at Saveetha Dental College and Hospitals in Chennai, Tamil Nadu, India, is to find out why so many children had their teeth pulled during the COVID-19 national lockdown. Steps to follow and materials: Six hundred and five kids who had extractions at the Pedodontics Department of Saveetha Dental College and hospitals that are connected to it were part of the study. The kids were picked at random and put into three age groups: 0–5 years old, 6–12 years old, and 13–17 years old. We got all of the patient data from March 2020 to July 2020. Version 23 of SPSS software was used to analyse the data. There was a chi-square test. The data showed that oral cavities were a popular reason for both men and women to have teeth pulled. Still, on average, more men than women took out their teeth. From the chi-square test, we can see that the reason for extraction was significantly linked to both gender and age ($p = 0.025$ and $p = 0.01$, respectively). Based on what the experts saw during the lockdown, tooth cavities were the main reason for the extractions needed. Also, the pattern of extractions was seen to be stronger in men than in girls.

KEYWORDS: Covid 19; Dental caries; Extraction; Orthodontics; Trauma;

INTRODUCTION:-
Humans are diphyodonts because they have two sets of teeth: primary and permanent. The primary teeth of a child constitute the twenty teeth (ten in each arch) as exercises' result of mouth formation is completed by the age of six weeks. (1)
The first primary dentition appears at the sixth month, with the first tooth to erupt completing this milestone by the second year mark and continuing to three by the age of five. Primary teeth are functional from five to twelve years, at which point the child begins to develop permanent dental teeth. (1,2) Primary teeth and especially molars serve as a child's primary means of chewing food, socialized speech, and cosmetic usage. They also provide a means of supporting the position of permanent teeth in the arch (3)
A primary tooth can also suffer a loss before the due date designated by the normal exfoliation set period is termed as early or premature loss. Most experts consider to be this kind of premature primary loss of tooth is due to loss of space availablefor teeth which causes ineffective subsequent teeth aking lack of their intended position thereby malfunctioning leading to skeletal and dental malocclusion of teeth. (4) The most known reasons behind a child losing their teeth prematurely is dental cavities.
Despite the notable efforts made to improve the general population's dental caries problems over the past few decades, children are still suffering from dental caries. (4, 5)
For younger children, dental caries is the leading cause of losing teeth prematurely. Additionally, children are still suffering from dental caries problems. (6) The statewide closure of dental services was due to fears, uncertainties, and lack of evidence regarding the possibility of SARS-CoV-2 being transmitted during dental procedures. Due to the pandemic lockdown, the oral health-related quality of life for preschool children was severely diminished owing unmet dental care needs.
Children's tooth health was not taken care of in Tamil Nadu. The goal of this study is to look into why kids had their teeth pulled during the national lockdown because of COVID-19 at Saveetha Dental College and Hospitals in Chennai, Tamil Nadu. The people in our group have a lot of research experience and knowledge from high-quality publications (8–20) (21–27).

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MATERIALS AND METHOD :-

This study utilized a sample of 357 children, of which 104 were assigned to groups participating in capture-recapture experiments. The subjects in the sample who received surgical extractions at the pedodontics unit of Saveetha Dental College and Hospitals were of the ages 0 to 5 years, 6 to 12 years, and 13 to 17 years, with each group corresponding to the respective age range. Patient details for the duration of March 2020 to July 2020 were meticulously recorded. Data validation was done by a second examiner to ensure accuracy. Inclusion criteria comprises of patient's name, age, gender, tooth extraction particulars including tooth number, month of extraction, and reason for extraction. Extractions were classified under dental caries, trauma, orthodontics, mobility, over retention, and other reasons. Patients with systemic disease were excluded from the study. The collected data was analyzed using SPSS Software version 23. Data was compiled into tables for evaluation, and chi-square analysis was conducted. Values obtained from the chi-square test were analyzed and the association was checked at the 0.05 level of significance to determine if there is statistical significance.

RESULTS AND DISCUSSION :-

The study results showed that, out of 357 patients, 179 extractions were done in boys and 178 extractions were done in females (Table 1). It was also observed that between 0-5 years of age 54 extractions were performed, between 6-12 years 245 extractions were performed and 58 extractions were performed between 13-17 years (Table 2). Among all the age groups dental caries was the most common reason for extraction other reasons (98)such as money, transportation and followed by mobility (65).The chi square test value was statistically significant for association of age and reason for extraction (p value - 0.01) and association of gender and reason for extraction (p value - 0.025).

Table 1: Indications for extraction among Children according to gender.

REASONS FOR EXTRACTION	NUMBER OF TEETH EXTRACTED IN BOYS	NUMBER OF TEETH EXTRACTED IN GIRLS	TOTAL NUMBER OF TEETH EXTRACTED	P - VALUE
Dental Caries	59	74	133	0.019
Trauma	2	6	8	
Mobility	34	31	65	
Orthodontics	2	6	8	
Over Retention	25	20	45	
Other Reasons	57	41	98	
TOTAL	179	178	357	

Table 2 - Extraction indicators among Children according to gender.

	Dental caries	Trauma	Mobility	Orthodontics	Over Retention	Other Reasons	Total	P value
0-5 years	14	0	7	0	12	21	54	0.025
6-12 years	103	5	43	6	26	62	245	
13-17 years	16	3	15	2	7	15	58	
Total	133	8	65	8	45	98	357	

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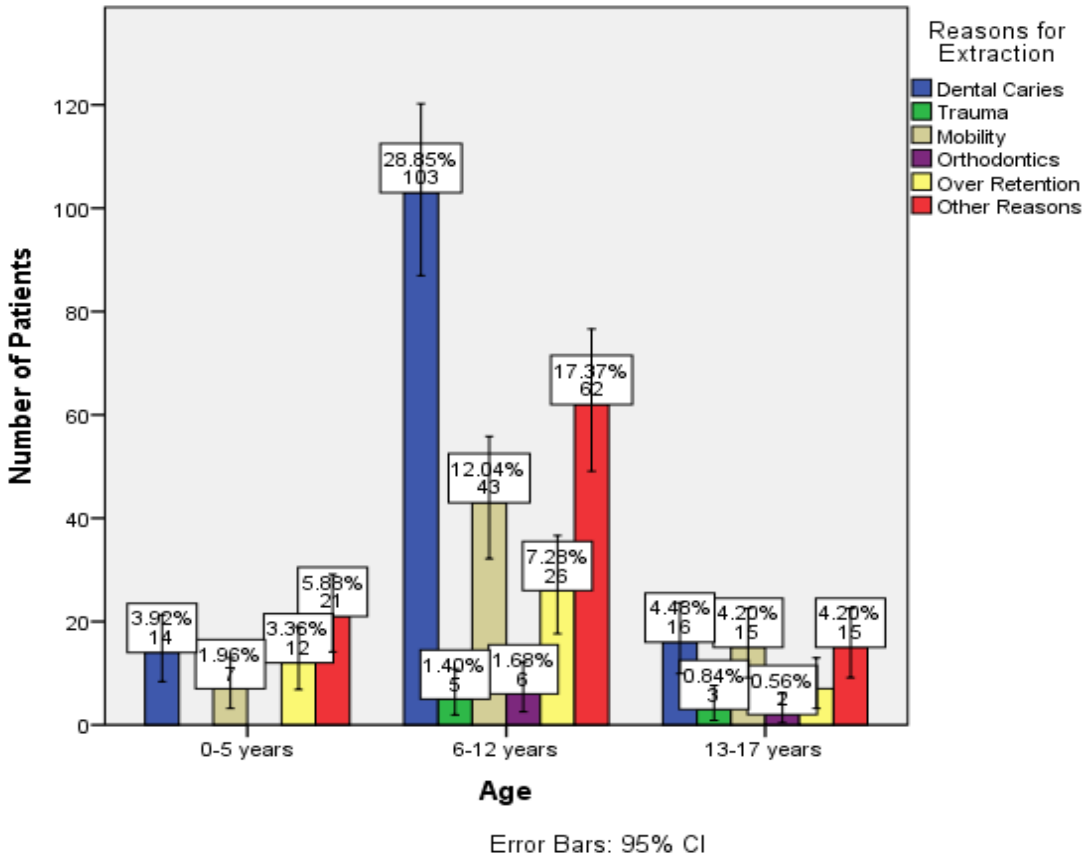

Figure 1 - a bar graph demonstrating the relationship between the age of patients and the reason for extraction among Indian children during a national lockdown due to COVID 19 The horizontal x axis denotes the age of the patients while the vertical y axis denotes the reasons for extraction. The blue portion corresponds to dental caries, green portion corresponds to trauma, light brown represents mobility, purple denotes orthopedic cases, yellow depicts over retention while red corresponds to other reasons.

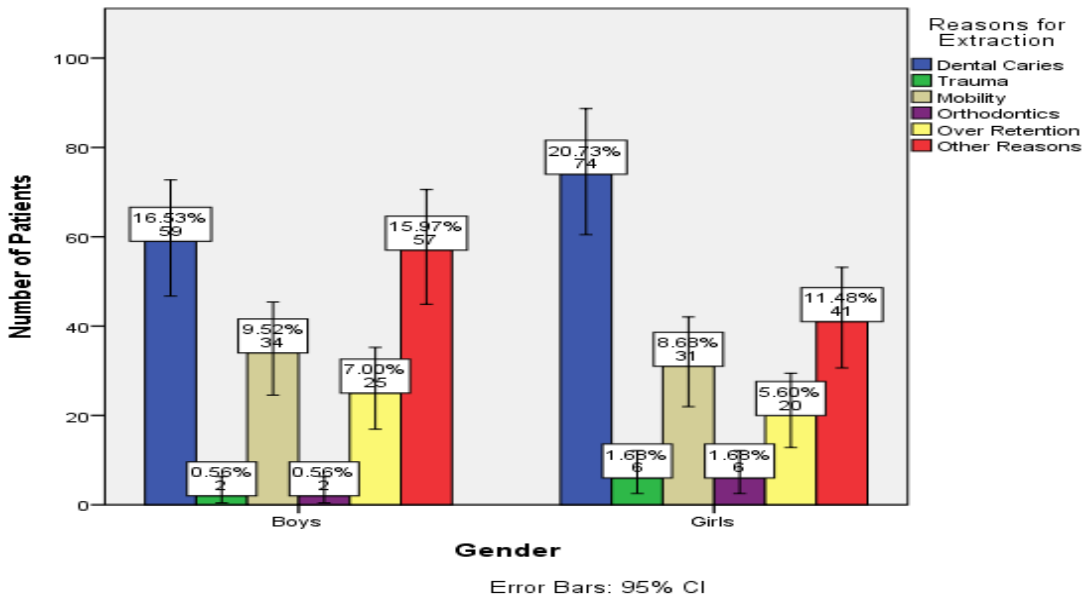

Figure 2 - This bar graph shows the relationship between gender of the patients and the reason for extraction amongst Indian children during the National Lock down due to COVID 19. Each gender is shown on the x - axis and different reasons for extraction are shown on the y - axis. The blue colour indicates dental caries, green colour indicates trauma, light brown indicates mobility, purple indicates orthodontics, yellow indicates over retention, and red indicates other reasons.

Due to the dread of SARS-CoV-2, COVID-19 has created significant hurdles in obtaining and providing normal dental treatment.(28) SARS-CoV-2 is spread mostly by respiratory droplets and saliva, and dentists are among the most vulnerable to the virus since practically every dental procedure produces salivary bioaerosols in close proximity, and SARS-CoV-2 is spread via aerosols. It can be difficult to provide dental care to children during the COVID-19 pandemic, especially given the increasing societal restrictions.(29)

The concern of pre and primary school children being anxious and afraid is common, and in most scenarios leads to what is called dental anxiety "dental dread", which affects about 7-8% of children during their age which may hinder them from seeking dental treatment. This fear predominantly originates from the anticipation of the procedure and pain involved, but, during pandemic related lockdowns, these emotions along with fears related to leaving the house can amplify due to caregiver stressors related to deciding if staying home or going outside exposes them to contracting the SARS-CoV-2 virus. (30)(31)

Certain procedures like extraction and pulpectomy were performed more often during lockdown whereas during live consultations, these procedures were lesser to none performed. Simpson et al. mentions that, for younger children, the most common reason to seek help was irreversible pulpitis or dental trauma, with 49 percent of them being extractions. (32) Restrictions to the type of dental work that could be performed during period of time labeled lockdown, along with sudden uncertainties on the duration of time prohibited worked posed, may have influenced the more invasive methods like exodontia.

CONCLUSION

Within the study limits of our study, it was found that dental caries was the most common reason for extraction during lockdown. Extractions were more in females compared to males.

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CONFLICT OF INTERESTS

All authors state that they have no conflict of interest regarding the study.

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