

Evaluation of requirements of extraction of primary maxillary first molar in 6 to 9 year old children.

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ABSTRACT :

INTRODUCTION : Tooth extraction in a population can provide a detailed idea and knowledge on the attitude towards dental treatment , the availability of care , motivation on oral health and hygiene and attitudes towards tooth extraction.

The squale on loss of primary molar is based on caries first followed by severe pain due to caries , sepsis due to any infection and then orthodontics comes as final. The main idea of the study is to evaluate the requirements of extraction of maxillary primary molars of 6-9 years old.

MATERIALS AND METHODS : A population of 136 children from the age group of 6-9 years who had undergone extraction of the second maxillary primary were collected from the dental information archiving software. The datas were tabulated together in excel sheet and the results were analyzed using SPSS software and Pearson Chi-square test was done to find the significance where p value was kept <0.05 as the significance level.

RESULTS : The outcome of the study show that 48.6% requirement of extraction is due to caries , 15.4% due to trauma, 15% due to mobility, 7% due to root resorption.

CONCLUSION : The study concludes that ,caries is found to be the most common requirement for extraction,thus pediatric oral hygiene and parental care is much needed.

KEY WORDS : caries , extraction, Innovative techniques,primary molars, pediatric care

INTRODUCTION :

Tooth extraction in a population can provide a detailed idea and knowledge on attitudes towards dental care, the availability of care , motivation towards oral health and hygiene and people's tendency towards tooth extraction. Although the rate of cavities in young children has reduced for the past few years, caries continues to affect many children within the general population, particularly in developing countries where the rate of the disease is increasing (1,2). It has been observed that on considering the DMFS data that showed a rise within the “M” part and a dropout in the “F” which represents missing and filled tooth respectively (1–4). Various Studies Suggest that the reasons for tooth extraction in general dental practice were aimed at reducing the relative significance of caries and periodontal complications as causes of tooth loss in adults (5,6). Various studies suggest that the main reason for extraction is mostly due to extensive caries progression .Early extraction of primary molars may lead to crowding of varying degrees and the eruption pattern of permanent teeth can also deviate from its normal path (7,8). Various studies have suggested that loss of primary tooth is mostly due to not considering the oral hygiene status, poor economy status , lack of parental care. The squale of loss of primary molar is based on caries first followed by severe pain due to caries , sepsis due to any infection and then orthodontics comes as final (9,10).

MATERIALS AND METHODS :

This retrospective study was conducted in the Department of Pedodontics , Saveetha dental college and hospital, Chennai to evaluate the prevalence of dental trauma among children and adults. The data was taken from Dias i.e dental information archiving software from september 2020 to April 2021. Children from the age group 6 to 9 years whose first maxillary primary molar were included in the study. Children below the age group of 6 years and above the age group of 9 years were excluded from the study. Total of 136 data including the age group and the extracted. Age, gender, requirement of extraction were evaluated and tabulated. The collected data was validated in a standardised manner and tabulated in excel and finally analysed with Statistical Package for Social Sciences (SPSS) for Windows, version 26 and results were obtained. Categorical variables were expressed in frequency and percentage. Chi-square test was used to test associations between categorical variables. P value < 0.05 was considered statistically significant.

RESULTS :

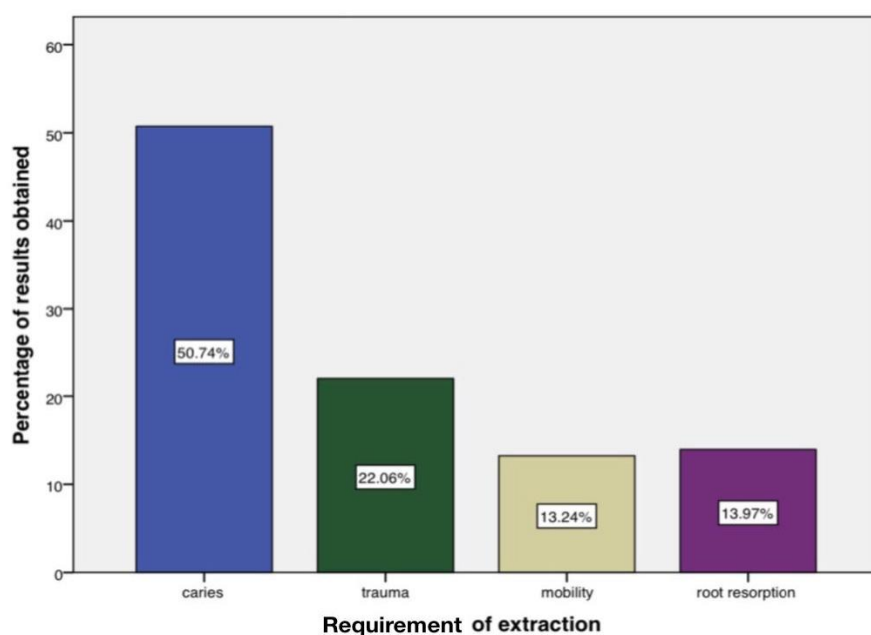


Fig.1: The above graph represents the percentage of requirement for extraction wherein X axis denotes the requirements which is of caries, trauma, mobility and root resorption. Y axis represents the percentage of the requirements. It has been observed that caries is the most common cause for extraction which is 50.74%. Where trauma and mobility remains around 22.06% and 13.24% respectively. Root resorption is the cause for extraction which is 13.97%. The p value obtained is of 0.019 which is statistically significant.

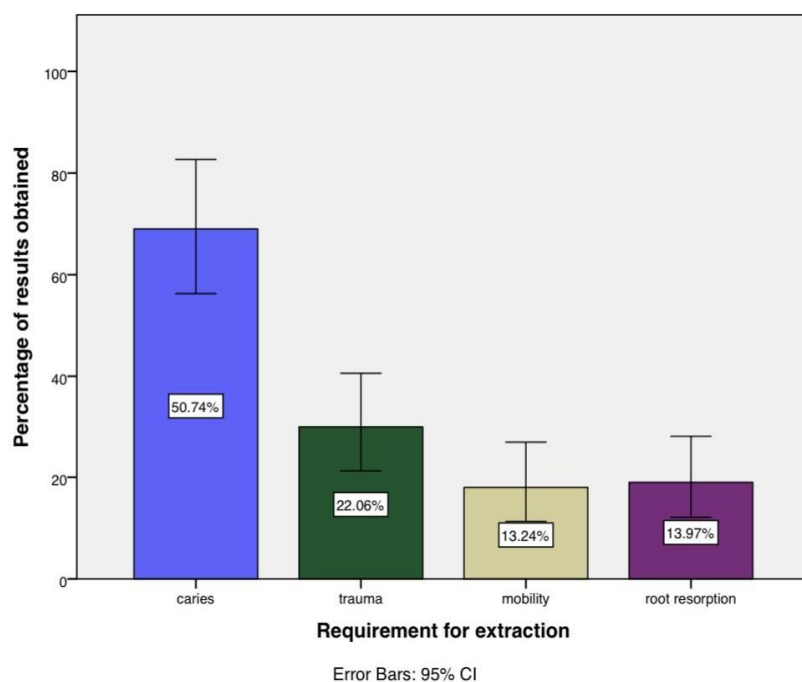


Fig.2 : The above error graph represents the percentage of requirement for extraction wherein X axis denotes the requirements which is of caries, trauma, mobility and root resorption. Y axis represents the percentage of the requirements. Blue colour denotes caries , green denotes trauma, purple denotes root resorption, grey denotes mobility. It has been observed that caries is the most common cause for extraction which is 50.74%. Where trauma and mobility remains around 22.06%

and 13.24% respectively. Root resorption is the cause for extraction which is 13.97%. The p value obtained is of 0.019 which is statistically significant.

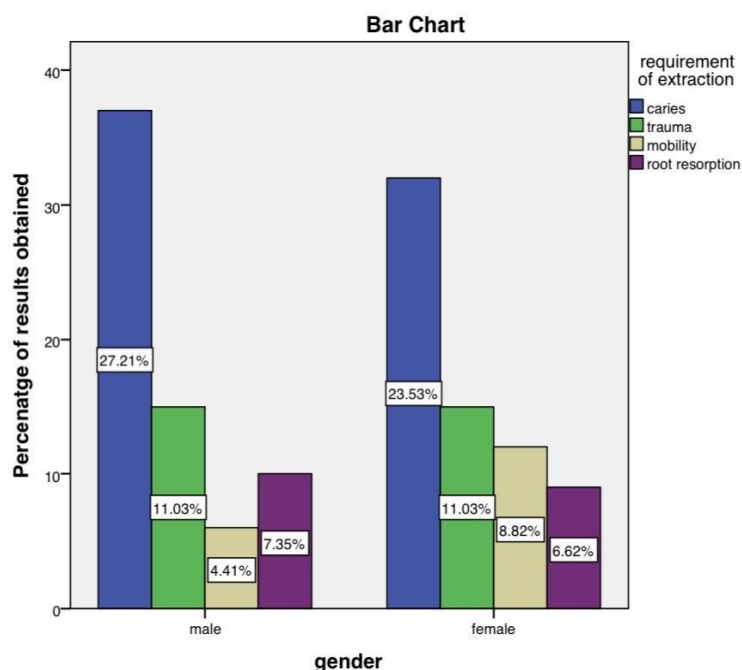


Fig.3 : The above graph represents the gender comparison of requirements of extraction. X axis represents gender and Y axis denotes the percentage of requirements of extraction. It has been observed that male population is more prevalent in extracting due to extensive caries which is 27.21% and mobility is the least cause for tooth extraction of teeth in male. In females 23.53% of the population need extraction due to caries and least cause is of root resorption which is 6.62%. The p value obtained is of 0.012 which is statistically significant.

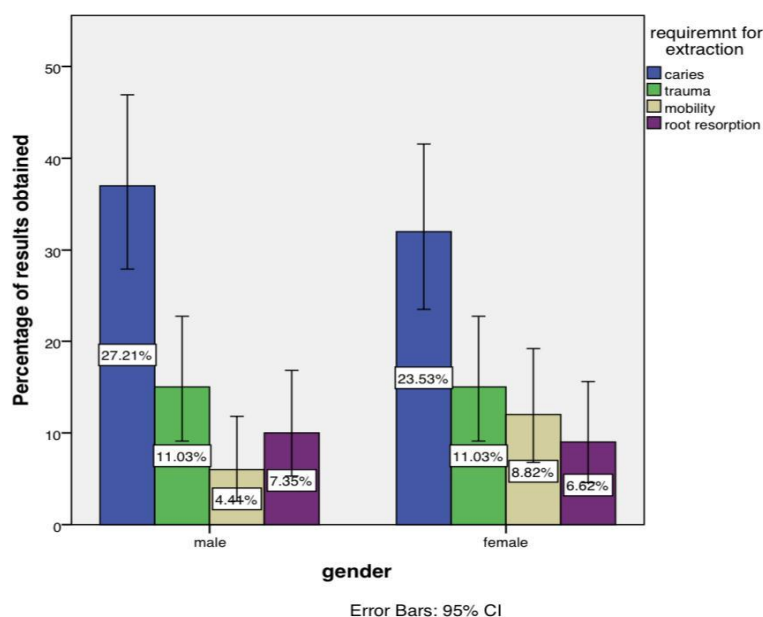


Fig.4 : The above error graph represents the gender comparison of requirements of extraction. The X axis represents gender and the Y axis denotes the percentage of requirements of extraction. Blue colour denotes caries , green denotes

trauma, purple denotes root resorption, grey denotes mobility. It has been observed that male population is more prevalent in extracting due to extensive caries which is 27.21% and mobility is the least cause for tooth extraction of teeth in male. In females 23.53% of the population need extraction due to caries and least cause is of root resorption which is 6.62%. The p value obtained is of 0.012 which is statistically significant.

DISCUSSION :

From the results obtained it has been found that caries is the most common cause for extraction which is 48.62% and male population is more prevalent in extracting due to extensive caries which is 34.3% and mobility is the least cause for tooth extraction of teeth in male. In females 14.2% of the population need extraction due to caries and least cause is of root resorption which is 3.5%. Caries and pulpal infections were a major necessity for the extraction of primary teeth with 48% of the teeth being extracted due to pulpal and periapical infections, which is untreatable by pulp therapy and any other treatments and also the prognosis of the tooth might not be so good. (11,12). Even though the oral health of paediatrics were developed, recent evidence suggests that dental disease remains as a continued source of tooth loss during a percentage of all pediatric populations. It has been observed that within the last 10 years have shown that the incidence of caries among U.S. children seems to be concentrated in about 20-25 percent of the U.S. child population(13,14). The results obtained from the present studies have proved that there is an increase in the prevalence of caries among children. Also various studies suggest that investigations to spot these subgroups of children at risk for caries, even in fluoridated regions, are urgently needed(15,16). But the amount of tooth extractions which was demanded due to caries, the data (Figure 1) easily demonstrates that cavities remain a big explanation for tooth loss. However, there is a big chance of extraction of teeth associated with dental mal development and orthodontic considerations. Also, traumatic injury continues to be another significant reason for tooth loss in pediatric populations (17,18). corresponding results were found during a former study done by Caldas AF et al reported that the caries were a significant reason for tooth extraction followed by traumatic cases. (Figure 2) shows the association between gender and thus the demand of extraction of the maxillary second primary molar where p value = 0 ($p < 0.05$) shows the data is statistically significant. Extraction due to trauma also increases with age. In the present study boys were more affected by caries than girls which corroborates with a former study done by Cavalcanti AL et al 14 this could be coordinated to the behavioural changes that be over time (19,20).

CONCLUSION :

Thus, it has been concluded that the most needed cause for extraction of first maxillary molar in the 6-9 years age group of children are due to caries prone to infection. Preventing caries in primary teeth should be initiated early in life to identify those that are at high risk. Wherein proper oral hygiene and parental care is much needed to avoid the premature loss of deciduous tooth which further leads to further complications.

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CONFLICT OF INTEREST : The authors declare that they have no conflict of interest for this study.

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