

Evaluation of requirement of extraction of first maxillary primary molar in 3 to 5 years old children .

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ABSTRACT :

Introduction : Permanent premolars (also known as bicuspid) replace the primary molars, and permanent molars erupt behind the primary teeth. The lower two front teeth (incisors) and the upper and lower first molars, the molars closest to

the front of the mouth, are usually the first teeth to appear. Because of the high frequency of oral illness in developing nations, primary tooth extraction is a widespread and serious concern. Because these teeth are expected to fall out on their own, they receive the least attention, producing in significant problems such as crowding and malocclusion. The aim of this study is to evaluate the requirement of extraction of the first maxillary primary molar in 3 to 5 year old children

Material and methods : A total of 220 children from the age group of 3-5 years who had undergone extraction of the first maxillary primary molar were collected from the DIAS record. The data were clubbed together 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.

Result and discussion : The results show that 36.99% requirement of extraction is due to caries, 19.18% due to mobility, 24.66% due to trauma, 8.22% due to root resorption and 10.96% due to other reason

Conclusion : The study concludes that despite the improvement in pediatric oral health, caries is found to be the main reason for extraction.

Keywords : Extraction, caries, first maxillary primary molar and 3 - 5 years children, Innovative technique.

INTRODUCTION :

The eruption phase is a very complicated mechanism in which a number of elements must work together in order for a natural eruption to occur. This mechanism, however, may be influenced by genetic, biochemical, cellular, or tissue factors. The majority of dental eruption disorders occur at the tooth transition stage(1). The avoidance of more complex malocclusions is possible with early diagnosis and care using natural powers of eruption. Human beings have two sets of dentition, primary teeth and permanent teeth, they are known as diphyodonts. The tooth erupts at the 6th week of intrauterine life(2).

Primary teeth are primarily utilised for chewing food, speech, and aesthetics, and they also serve as a pattern for permanent teeth to acquire optimal dental arch position (3). Oral health treatment is in short supply, especially in rural areas. Primary teeth are also regarded not to require treatment because new teeth can develop on their own. This could be related to the parents' lack of information and attitude toward primary tooth dental care.(4) Although the origin of ectopic eruption of the maxillary first permanent molar is unknown, it is believed to be multifactorial.(5). The maxillary first molar's tooth germ is guided inside, upward, and outward until it emerges.(6). As the tooth begins to burst, it becomes more erect. This anomaly could be caused by differences in bone-tooth scale or a change in the chronology of bone formation at the tuberosity area in relation to calcification and eruption of the molar(7). Unfavorable second main molar crown anatomy or an irregular eruption angle of the first permanent molar are two such dental reasons. Another thing to remember is heredity(8).

Because of inadequate sample size, the cross-sectional structure of the research, and a lack of clarification about the eruption condition of the permanent first molars, several previous studies misinterpreted their findings on space shifts following the premature loss of a primary first molar(9). Furthermore, a two-dimensional examination of a dental cast may help to correct measuring errors in what is essentially a three-dimensional object. The aim of our study is to find the Evaluation of requirement of extraction of first maxillary primary molar in 3 to 5 years old children.

MATERIALS AND METHODS :

The retrospective study was conducted in a private dental college, Chennai, India. Ethical approval was obtained from the Institutional review board prior to the start of the study. Data was collected from the records of the children between 3 - 5 of age who were requirement of extraction of maxillary first primary molar between September 2020 to February 2021. A total of 220 children were requirement of extraction of maxillary first primary molar included in the study. Data collected with following parameters like age and gender.

The collected data was divided into 5 types they are due to trauma, caries, restoration, mobility and others analysed using spss statistical software .Data analysis done using chi - square test.P-value was set as 0.05 as level of significant

RESULT AND DISCUSSION :

A total of 220 children from the age group 3-5 years old who had undergone extraction of the first maxillary primary molar. The obtained results show that the first maxillary primary molar is required to extract due to the caries prevalent which is about [36.99%] from (figure 1).

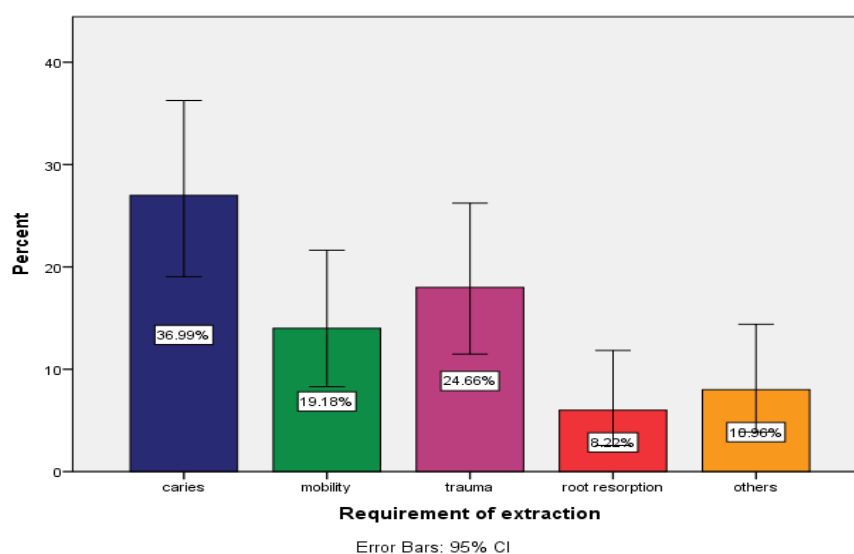


Figure 1: The bar graph depicting the results for the extraction of a First maxillary primary molar. Where X represents the need for extraction and Y axis represents the results obtained for the same. Blue colour denotes teeth extracted due to caries, green colour denotes teeth extracted due to mobility, pink colour denotes teeth extracted due to trauma, red colour denotes teeth extracted due to root resorption and yellow colour denotes teeth extracted due to other reasons, show a majority of about 36.99% extracted due to caries.(chi square test ;p value = 0.00 ; p<0.05 ; showing a significant association.

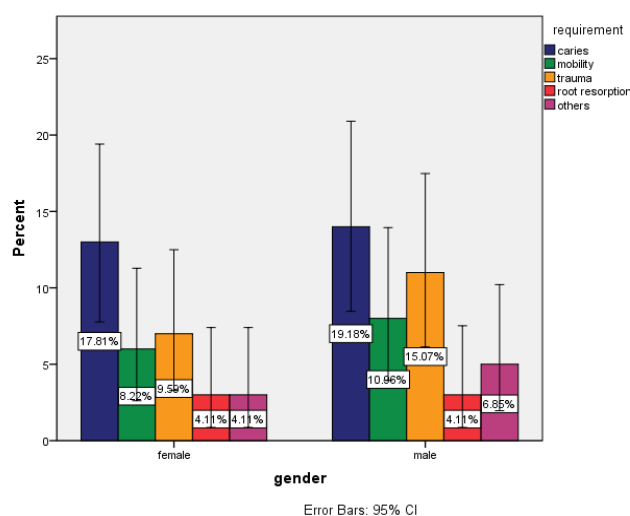


Figure 2 : The bar graph in association between the gender and the requirement of extraction of the first maxillary primary molar. Where X axis represents the gender and Y axis represents the percentage obtained for the various reasons

of extraction. Blue colour denotes teeth extracted due to caries, green colour denotes teeth extracted due to mobility, yellow colour denotes teeth extracted due to trauma, red colour denotes teeth extracted due to root resorption and pink colour denotes teeth extracted due to other reasons. Pearson Chi-square test shows p value=0($p<0.05$) thereby the data is statistically significant.

The amount of tooth extractions necessary as a result of caries, as shown in [Figure 1], shows that dental caries is still a major source of tooth loss. Nonetheless, dental development and orthodontic factors accounted for a large portion of tooth loss. Similarly, trauma [24%] continues to be another significant reason for tooth extraction in pediatric populations. Similar results were found in a previous study done by [María Cruz Suarez-Clúa](#) reported that the caries were a major reason for tooth extraction followed by trauma(10).

[Figure 2] depicts the relationship between gender and the need for extraction of the maxillary first primary molar, with a p value of 0 ($p<0.05$) indicating that the data is statistically significant. Traumatic extraction becomes more common as people get older. Males are more impacted by caries in this study than females, which supports a prior study by Elena Barberia-Leache. This could be due to behavioural changes that occur throughout time (11).

The ectopic eruption of the first permanent molars has been linked by some writers to additional dental abnormalities. Because of the methodological methodology used in this investigation, these conditions were not taken into account(12).

Tooth mortality in a population can provide information about the cost of dental care, the prevalence of dental disease, and attitudes regarding tooth loss. Despite the abundance of studies on tooth loss and dental extractions in the permanent dentition, there is little information on tooth loss in the primary dentition. Primary tooth extraction is a popular procedure in paediatric dentistry, and it's frequently utilised as part of treatment strategies for caries, trauma, and orthodontic issues(13).

Primary teeth are also extracted due to caries and pulpal disease, with pulpal and periapical illness, which is untreatable by pulp surgery, accounting for 22% of extractions. Despite the fact that paediatric oral health has vastly improved in recent decades, new research demonstrates that dental illness remains the leading cause of tooth loss in the majority of children. Our team has a wealth of research and knowledge that has resulted in high-quality publications(14–26) (27–33)

CONCLUSION :

The study concludes that the majority of the requirement for extraction of first maxillary molar in the 3-5 years age group of children are due to caries prone to infection.

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