

## Requirement of Extraction of Mandibular 1st primary molar in children age group of 6 to 9 years-A retrospective study

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#### Abstract:

**Introduction:** Deciduous teeth help in mastication of food, speech, fascial aesthetics and also act as a template for permanent teeth to presume correct alignment in the dental arch. The premature loss is defined by the loss of deciduous tooth before the time of its natural exfoliation

**Materials and Methods:** This is retrospective, cross sectional study and it is completely based on university dental and hospital control between people who suffer coming upon a dental clinic in Chennai. The chi square test was used for this descriptive statistics and relation among variables. P less than 0.05 were looked into as statistically significant.

**Result:** 42.3% of children be in the age group of six to seven years, 23.0% of children belonged to the age group of 7-8 years and 34.7% of children belonged to the age group of 8-9 years (Figure 1). 55.1% of children were male and 44.9% of children were female (Figure 2). Extraction of mandibular 1st primary molar mainly occurs due to different ways, both caries that are primary and secondary caries plus all importance including periapical abscess and failed treatment of pulpotomy. When a child undergoes any orthodontic treatment, teeth must be taken away to avert or correct malocclusion.

**Conclusion:** Caries were one of the main causes of primary tooth mortality, prevention or control of caries is the best way to avoid extraction of the tooth. Within the limitation of the study, it's finally concluded that male children were extracted tooth number 84 more than the tooth number 74. So, the prevalence of extraction is more in male than females.

**Keywords:** extraction, caries, innovative technique, periapicalabscess, prevention

#### Introduction:

It is the principle for practicing dentists to approach and use suitable clinical regulation. Many colleges maintain and follow the exact clinical regulation through committee. Deciduous teeth are considered to be equally important as the permanent teeth. Mainly, deciduous teeth help in mastication of food, speech, fascial aesthetics and also act as a

template for permanent teeth to take a correct position in the maxillary and mandibular arch. The premature loss is the loss of the deciduous tooth which is first formed in a dental arch that will exfoliate before the time of its natural exfoliation (Mouradian 2000)(Brothwell 1997). Primary or deciduous teeth play a principal role in basic life purposes such as phonetics, and eating. Primary teeth are helpful for the children to achieve their fundamental needs. Most of the population has not any concern about the primary tooth. These days, most common problems in children are early childhood caries, parents of the high caries risk children believe that the affected primary tooth will not create any problem of the permanent tooth (Mtalsi 2020)(Mtalsi 2020; Grytten et al. 1988). Mixed dentition usually begins at the age of 6 and ends upto 12, in that period one or few permanent molars might go for extraction because of the poor prognosis. After extraction of the permanent molars, the other permanent molar in the oral cavity to erupt successfully in the space. Furthermore, this is not in a normal way. The pediatric dentists and the orthodontist ideally made a determination of treatment design, although this may not be possible (Cobourne, Williams, and Harrison 2014). Tooth mortality in the population can provide information about the prevalence of dental care, the availability of dental care, and attitude towards tooth extraction. Although the prevalence of dental caries in young children has decreased considerably in recent years, caries continue to affect many children in the general population, particularly in developing countries where disease rate is high (Whittle, Mackie, and Sarll 1983). Pedodontic have always obtained that considering mixed dentition as a major authority. Dental care of the child is applicable to every pattern of the dentition and it is very important to prevent the early formed caries. Removal or early loss of primary molar will appear crowding in some children cases. (Rönnerman 1977). Most of the children were exposed to traumatic episodes; in addition, dental injuries may be overlooked due to bleeding from soft tissues that required early treatment, and also due to the child's inability to cope with the situation. The treatment of complicated injuries in the primary dentition in most cases is limited to the extraction of the affected tooth (Gábris, Tarján, and Rózsa 2001)(Rai and Munshi 1998). Premature extraction of the primary tooth or exfoliation of the primary tooth have a huge variety of differences, mainly some tooth will go to the extraction of caries, some tooth will be missing, might be impacted or congenitally missing. This will also be associated with genetic and environmental factors. . Dental age is mostly considered to be the teeth that are present in the dental arch. For the purpose of this systematic review, PEPT was defined as any primary tooth was extracted before the regular shedding of the tooth.

Socio-economic status, prevalence of dental caries, water fluoridation and the treatment philosophy of dentists are the most common prevalence in premature extraction of primary tooth.(Pedersen, Stensgaard, and Melsen 1978)(Kau et al. 2004).

This high quality publication that has translate by the extensive knowledge and research experience of our team (Subramanyam et al. 2018; Ramadurai et al. 2019; Ramakrishnan, Dhanalakshmi, and Subramanian 2019; Jeevanandan and Thomas 2018; Princeton, Santhakumar, and Prathap 2020; Saravanakumar et al. 2021; Wei et al. 2021; Gothandam et al. 2019; Su et al. 2019; Mathew et al. 2020; Sekar et al. 2020; Velusamy et al. 2021; Aldhuwayhi et al. 2021)(Sekar, Nallaswamy, and Lakshmanan 2020; Bai et al. 2019; Sekar 2019; Sekar et al. 2019; Duraisamy et al. 2019; Parimelazhagan et al. 2021; Syed, Gnanakkan, and Pitchiah 2021). This study is to evaluate the requirement of extractions of the mandibular 1st primary molar in children in the age group of 6 to 9.

## **Materials and Methods:**

### **Study settings**

This is retrospective, cross sectional study and it is completely based on university dental and hospital control between people who suffer coming upon a dental clinic in Chennai. And it is a university hospital setting, contributing to a major advantage of the study are large sample size and distribution of population.

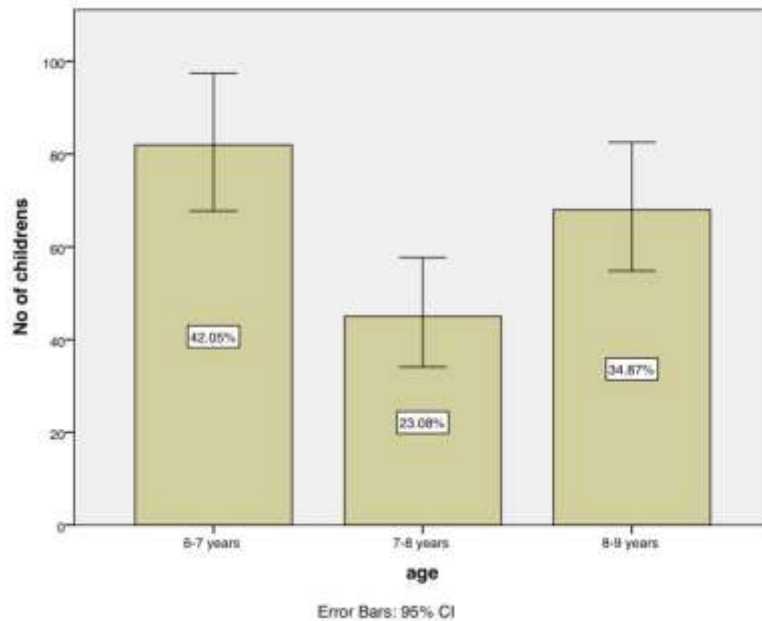
### **Study Samplings**

The population taken for the study was pediatric patients coming upon university hospitals. The sample that we selected included people who suffer in the group of age six to nine year. Study represented 197 children. Demographics such Age and Gender are considered as Independent variables whereas Dependent variable was a group of age six to nine. Dental records which are incomplete were excluded from the study. Collected data was systemized in the excel sheet.

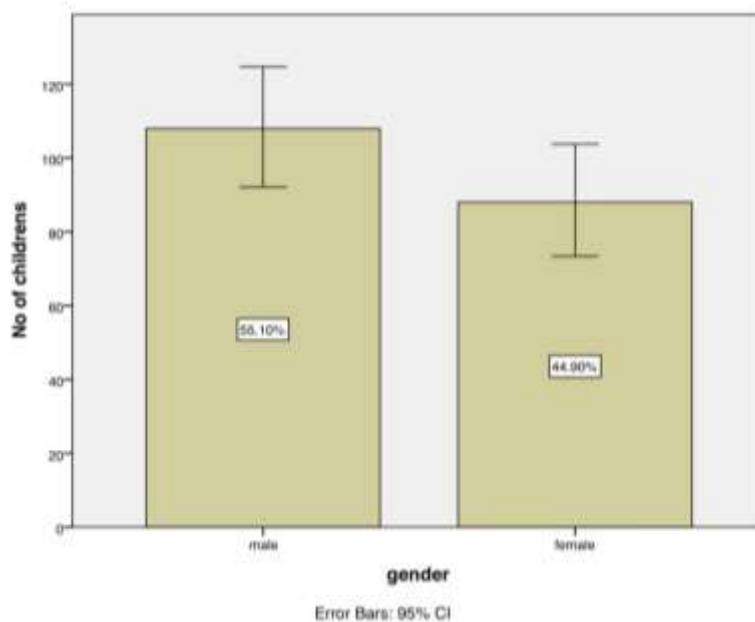
### **Data analysis**

The Available data were used for tabulating the parameters and then the tabulating data were exported to the SPSS software version 20.0. The chi square test was used for this descriptive statistics and relation among variables. P less than 0.05 were looked into as statistically significant.

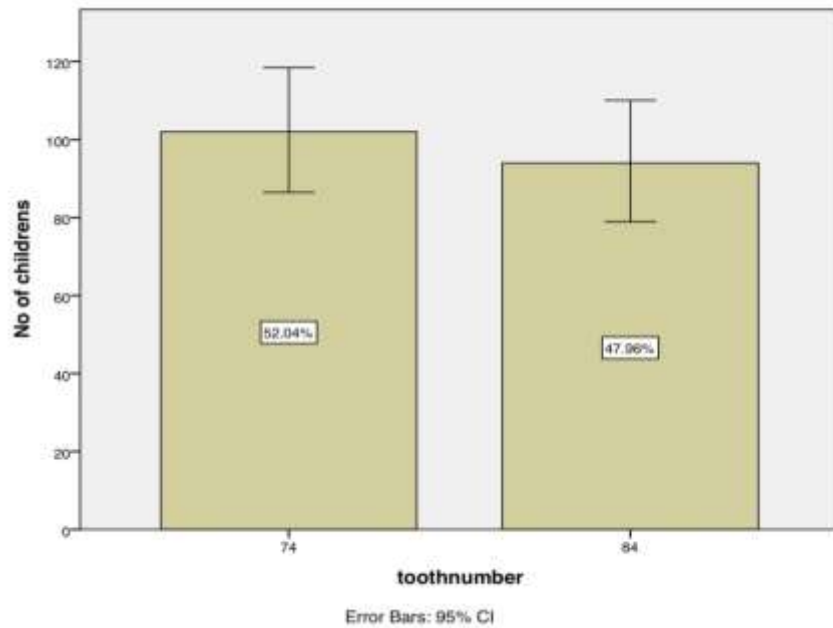
## Results



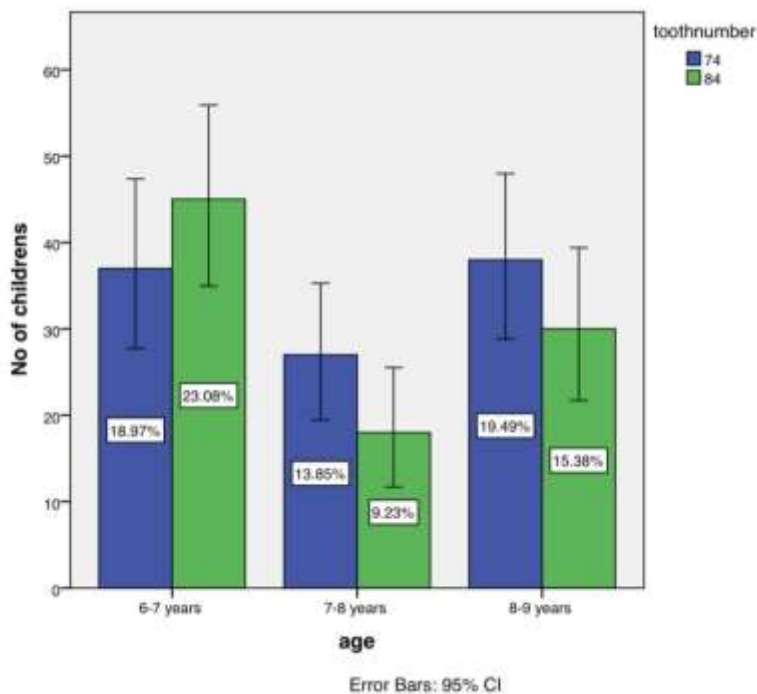
**Figure 1:** This chart shows the distribution of age between children. 42.3% of children were in the age group of 6-7 year, 23.0% of children belonged to the age group of 7-8 year and 34.7% of children belonged to the age group of 8-9 year.



**Figure 2:** This chart shows the distribution of gender between children. 55.1% of children were male and 44.9% of children were female.

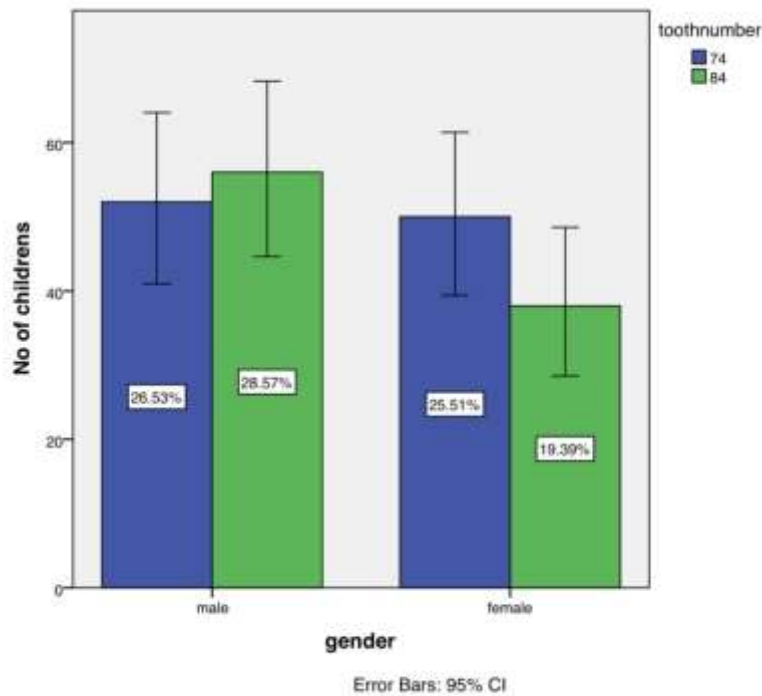


**Figure 3:** Bar chart showing the extracted tooth number among children. 52.0% of childrens were extracted 74 and 48.9% of childrens were extracted 84.



**Figure 4:** The Above graph shows the relation between the number and the age of children who have extracted the tooth from the age of 6 to 9 years. X- axis denotes the age and Y- axis denotes the number of children who have extracted teeth. Blue color denotes tooth number 74 and green color denotes tooth number 84. Among 197 children 23.08% of Children from the age group of 6-7 years were extracted the tooth 84. It was found to be statistically not significant by the result of the chi square test. The value of Pearson chi square was 0.183 (<0.05) consequently

proving that there was no significant association between the number of children who have extracted the tooth and the age of the children.



**Figure 6:** The above bar graph shows the relation between the number and the gender of children who have done the extraction of the tooth. X-axis denotes the gender, Y-axis denotes the number of children who have extracted the tooth. Blue color denotes tooth number 74 and green color denotes tooth number 84. Out of 197 children 28.57% of male children were extracted 84. It is found to be statistically not significant by the result of Chi square test. The value of Pearson chi square value was 0.227 ( $<0.05$ ) consequently proving that there was no significant association between the number of children who have extracted the tooth and the gender of the children.

#### Discussion:

Expansion of the streptococcus mutans is the one of the main causes for the early loss of the primary molar with an increased additional rate at 1.5 to 2 years and it will continuously keep on increasing with age and the number of erupted teeth in the dentition.

Because of the occlusal surfaces that are fissured in nature and proximal surfaces that are concave in nature, primary molars have increased affinity of streptococcus mutans. This will ultimately result in dental caries thus resulting in the extraction of the primary molar and hence early loss of the primary teeth.

6–12 years of children were found to be significantly higher in decayed, missing and filled teeth than that of 3–5 years of age group (Caufield, Cutter, and Dasanayake 1993) (Nasser, Rupkumar, and Junaid 2019). Between 197 children, 42.3% of children are in to the age group of 6-7 years, 23.0% of children are in to the age group of 7-8 years and 34.7% of children be in to the age group of 8-9 years (Figure 1). 55.1% of children were male and 44.9% of children were female (Figure 2).

Extraction of mandibular 1st primary molar mainly occurs due to different ways, Caries, any abscess such as periapical abscess and failed treatments mainly pulpotomy (Al-Shammery, Ernest Guile, and EI-Backly 1990). When a child experiences any orthodontic treatment, extraction of teeth must be needed to correct the malocclusion.

In a previous study according to Flores, teeth may also be extracted for traumatic reasons, because of its mobility. Loss of function, periodontal abscess and pain, prolonged retention of primary tooth (Flores 2002).

52.0% of children being extracted 74 and 48.0% of children being extracted 84. (Figure 3).

#### Conclusion:

Caries were the one of the main principal causes of primary tooth mortality, prevention or control of caries is the best way to avoid extraction of the tooth. Within the limitation of the study, it's finally concluded that male children were extracted tooth number 84 more than the tooth number 74. So, the prevalence of extraction is more in male children than in female children.

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