



**Ministry of higher education  
Babylon university  
college of dentistry**

**Descriptive study about Premature loss of primary molars  
among children who attended college of dentistry/Babylon  
University**

*This project is one of the requirments of bachelor degree submitted for  
department of pediatic , orthodontic and prevention in babylon  
university college of dentistry*

***Done by***

**Mohammed paqer abd al- sadah  
Zahraa satar fadhil  
Zainab deyaa  
Noor al-huda sabah**

***Supervised by***

**Dr. sara yousif**

**Dr.Ali zaki**

**2021-2022**

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

## (وَقُلْ رَبِّ زِدْنِي عِلْمًا (١١٤) طه .

صدق الله العلي العظيم

### الاهداء

الى من وضع المولى - سبحانه وتعالى - الجنة تحت قدميها، ووقَّرها في كتابه العزيز...  
(أمي الحبيبة).

إلى سندي و عزوتي ومن كان له فضل تربيته وتسميتي ومن أوصلني لما انا عليه  
والذي لم يتهاون يوم في توفير سبيل الخير والسعادة لي..  
(أبي الموقر).

إلى أصدقائي ومعارفي الذين أجلُّهم وأحترمهم..

إلى أساتذتي في كلية طب الاسنان جامعة بابل

ولا سيما الدكتورة سارة يوسف صاحبة الفضل الكبير في هذا البحث المتواضع

أهدي لكم بحبي

## بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

### شكر و تقدير /

نحمد الله الذي وفقنا في اتمام هذا البحث العلمي ، والذي اهتمنا الصحة و العافية و العزيمة

فالحمد لله حمدا كثيرا

نتقدم بجزيل الشكر و العرفان الى الدكتورة المشرفة " د. سارة يوسف " على كل ماقدمته لنا من توجيهات و  
ارشادات و معلومات قيمه ساهمت في اثراء موضوع دراستنا في جوانبه المختلفة

كما نتقدم بجزيل الشكر و الامتنان الى اعضاء لجنة المناقشة الموقرة

ولا ننسى اساتذة فرع التقويم و الاطفال و الوقاية وعلى رأسهم رئيسة الفرع الدكتورة لميس خضر محمد  
بالشكر الجزيل لما قدموه لنا من معلومات قيمه

وايضا نخص بالشكر عمادة كلية طب الاسنان / جامعة بابل وعميدها المحترم الاستاذ الدكتور امير حمدي  
العميدي ومعاونيه .....

فلكم كل الشكر و التقدير

## اقرار المشرف

اشهد ان البحث الموسوم

(.....) قد جرى تحت اشرافي

بقسم التقويم و الاطفال و الوقاية في جامعة بابل كلية طب الاسنان وهو جزء من متطلبات نيل  
شهادة البكالوريوس في طب و جراحة الاسنان

ا.د.علي زكي (المشرف)

م. م. سارة يوسف (المشرف )

### نوصية رئيس فرع التقويم و الوقاية و الاطفال

بناءً على توصية الاستاذ المشرف أرشح هذا البحث للمناقشة

م. لميس خضر محمد

رئيس الفرع

## Abstract:-

○Background: The early loss of primary teeth may reduce arch length required for the succeeding permanent tooth and thus result in crowding, rotation, and impaction of permanent teeth. The present study evaluates the prevalence of early loss of molars of primary teeth in children attended dentistry college .

○Materials and Methods: An experienced examiner performed all clinical examinations under natural light, a total of 206 children (84 boys and 122 girls) ages between 5 and 10 years were selected for the study.

○All statistical analysis are calculated by using SPSS version 26 software. Categorical variables were analyzed with Pearson's chi-squared test. P value of less than 0.05 was considered significant.

### ○Result

The results revealed that there was 206 children have premature loss ,the number of boys were 84 and girls were 122. Girls had a higher prevalence of early loss of primary teeth than Boys with statistically significant. It shows that non-significant difference of premature loss between first and second molars .It was seen that loss of molars was higher in the mandibular left side (36.9%) followed by mandibular right side(35.4%)

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## **Introduction:-**

The loss of primary teeth before the natural time of its exfoliation is known as premature loss of deciduous teeth. Dental caries, trauma, or early root resorption are the most common causes for premature loss of primary teeth.[1]

The premature loss of primary teeth is a major factor that can cause malocclusion in the sagittal, transverse, and vertical planes.[2] Studies have shown that the premature loss of primary teeth is associated with the reduction of the dental arch length and migration of the marginal and antagonist teeth, leading to rotation, crowding, and impaction of the permanent teeth.[3,4,5] In addition, the reduction of the dental arch length is greater in the mandible than in the maxilla[6,7] if a primary second molar, rather than primary first molar, is lost.[8] In addition, this effect is also apparent if tooth loss occurs at an earlier age,[9] and if it occurs in crowded dentition as opposed to well-spaced dentition.[10] For instance, early loss of primary second molar, especially in the maxillary arch, results in arch length reduction due to mesial migration of permanent first molars.[3] Premature loss in the maxillary arch may require extractions of the permanent teeth to align the dental arch, whereas premature loss in the mandible may require long-term orthodontic treatment in most cases.[11,3,12]

### **Materials and methods :**

This study was performed at Babylon university college of dentistry and conducted from 1 December 2021 to 31 March 2022. The permission was taken from their parent's to included their children in the study.

The sample size were 206 children of which 122 were boys and 84 girls who were between the 5 and 10 years of age group were selected for the study. All clinical examination was performed at 10:00 Am under chair light by an experienced single examiner using Dental probe, mirror, towel on dental chair. Premature primary tooth loss was considered when the primary tooth loss occurred at 12 months earlier than the chronological eruption time of succedaneous teeth.(14)

All the relevant data such as age, gender, and missing teeth were recorded. The data collected was then subjected to statistical analysis.

All statistical analysis are calculated by using SPSS version 26 software.

Categorical variables are presented as absolute numbers and percentages.

Categorical variables were analyzed with Pearson's chi-squared test. P value of less than 0.05 was considered significant



## **Result**

The results revealed that there was 206 children have premature loss. the number of boys was 84 and girls was 122. [Table 1] reveals the distribution of early loss of primary teeth among various age and gender groups. Girls had a higher prevalence of early loss of primary teeth than Boys .children, and it was found to be statistically significant ( $P = 0.03$ ). [Table 2] shows the distribution of early loss of primary teeth according to the dental group. It shows that non-significant difference between first and second molars [Table 3] represents the distribution of early loss of primary teeth arch and sides. It is seen that loss of molars was higher in the mandibular left side (36.9%) followed by mandibular right side (35.4%)

Table 1: Distribution of early loss of primary teeth among various age and gender.

Gender	Age groups/years				<i>P</i> value
	5-6	7-8	9-10	Total	
Boy / N (%)	14(25.9%)	48(46.2%)	22(45.8%)	84(40.8%)	*0.035
Girl / N (%)	40(74.1%)	56(53.8%)	26(54.2%)	122(59.2%)	
Total	54(100%)	104(100%)	48(100%)	206(100%)	

\*Chi-SquareTest

Table 2: Distribution of premature loss of primary teeth according to dental groups.

Dental group	Gender			<i>P</i> value
	Boys	Girls	Total	

First molar/ N (%)	9(46.4%)	64(52.5%)	103(50%)	*0.395
Second molar / N (%)	45(53.6%)	58(47.5%)	103(50%)	
Total	84(100%)	122(100%)	206(100%)	

\*Chi-SquareTest

Table 3: Distribution of early loss of primary teeth based on arch and sides.

Arch involved	Gender			<i>P</i> value
	Boys	Girls	Total	
Mandibular right / N (%)	35(41.7%)	38(31.1%)	73(35.4%)	*0.066
Mandibular left / N (%)	34(40.5%)	42(34.4%)	76(36.9%)	
Maxillary right / N (%)	9(10.7%)	22(18%)	31(15%)	
Maxillary left / N (%)	6(7.1%)	20(16.4%)	26(12.6%)	
Total	84(100%)	122(100%)	206(100%)	

\*Chi-SquareTest

Table 4 : The correlation between early premature loss of primary teeth among age groups.

Parameters	value	* <i>P</i> value
premature loss of primary teeth-age groups	0.175	0.043

\*Cramer's V Test

Table 3: Distribution of early loss of primary teeth based on arch and sides.

Arch involved	Gender			<i>P</i> value
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Maxillary right / N (%)	9(10.7%)	22(18%)	31(15%)	
Maxillary left / N (%)	6(7.1%)	20(16.4%)	26(12.6%)	
Total	84(100%)	122(100%)	206(100%)	

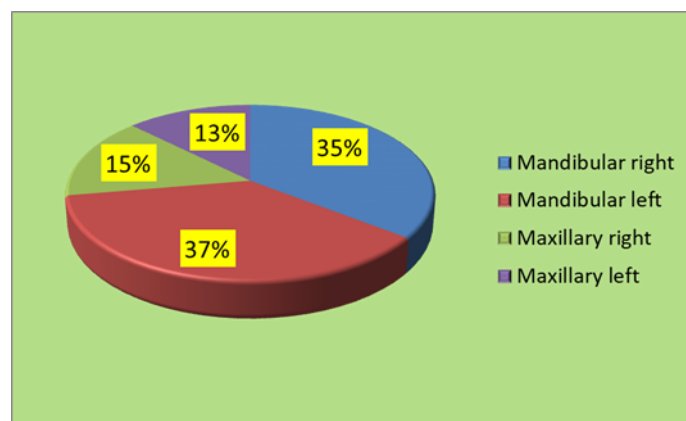
\*Chi-SquareTest

Table 4 : The correlation between early premature loss of primary teeth among age groups.

<b>Parameters</b>	value	<b>*<i>P</i> value</b>
premature loss of primary teeth-age groups	0.175	0.043

\***Cramer's V** Test

There is a weak correlation (0.175) between early premature loss of primary teeth among age groups.



**Fig.1:distribution of premature loss according to arch side**

### **Discussion:-**

The children and awareness was made regarding the consequences of early extraction and the importance to instead restore primary teeth was stressed. Reduction of early loss of primary molars can be achieved by the prevention of early childhood caries, creating awareness among parents, pediatricians and general dentist regarding the importance of primary teeth, as well as including oral health in school syllabus. Moving a step further it is essential to make parents understand the importance of space maintainers in place of a missing primary tooth to prevent malocclusion.

The distribution of early loss of primary tooth among various age and gender is 59.2 for girl and 40.8 for boys because most of patient come to the college of babylon is girls.

13] [This study agree with Cavalcanti et al , It could also be due to the geographic location, diet, cultural differences Alamoudi et al..

]14 [Distribution of premature loss of primary molar was equal in right and left side due to attributed to chronological age of eruption of first deciduous molar.

One of the reasons for the early loss of primary molars can be the colonization of *Streptococcus mutans*. The increased affinity of *Streptococcus mutans* toward the primary molars is because of the occlusal surfaces that are fissured in nature and the proximal surfaces that are concave. This will ultimately result in dental caries thus resulting in the extraction of the primary molars and hence early loss of the primary teeth.

The greater loss of primary molars in the mandibular arch might be due to food packing potential and greater plaque accumulation in the mandibular posterior region in contrast to the relative abundance of saliva and its anticaries effect to maxillary molar teeth.[the rich saliva supply provides anticaries effect to the upper posteriors whereas the mandibular posteriors are more prone to food getting packed on to the tooth surfaces and hence resulting in plaque accumulation. Hence, the mandibular posteriors have a higher rate of disposal to dental caries.[15]

The current study reveals higher loss of teeth in the left side (39.9%), reflects the lack of teeth cleanliness in the right side because a higher attention is paid to the prophylactic methods in the right side than the left. This leads to an increased tendency for plaque accumulation in these less cleaned tooth surfaces due to the lower level of shearing occlusal and tooth brushing forces.[16],[17] A large number of children brush only once during the day according to a study by Thanish Ahamed,[18] which is a sign of poor oral hygiene which can result in early childhood caries. Early childhood caries has disadvantageous effects such as higher risk of new carious lesions development[19]

] 20 [All these varied factors lead to caries of the primary teeth which leads to the unfortunate extraction of the tooth resulting in early loss of

primary teeth. Dental caries remains the major cause for early loss of primary teeth followed by trauma..

**Conclusion:**

The prevalence of early loss of primary teeth was present in predominantly in male children (40.8%) when compared to female children (59.2%) which was statistically significant ( $P = 0.035$ ). It is seen that loss of molars was higher in the mandibular left side (36.9%) followed by mandibular right side (35.4%).

**Suggestions :-**

- 1-relation between dental caries of the children and premature loss.
- 2-impact parent education on premature loss of primary teeth.

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*THANK YOU*