

# ASSOCIATION BETWEEN FIRST DENTAL VISIT AND PAIN IN CHILDREN -A RETROSPECTIVE STUDY

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## ABSTRACT

Oral health is a vital part of overall infant health. An early age between 6 months to 12 months dental visit is important in rendering prevention, intervention and parental counselling regarding oral health. Pain is an unpleasant sensory and emotional experience associated with actual potential tissue damage according to internal association for the study of pain. Aim of the study is to assess the association between age of the first dental visit and pain in children. A retrospective cross-sectional study was conducted using the patient records from the Department of pedodontic, Saveetha Dental College, visited from February 2019 to February 2020. The children with first dental visit without the past dental history were collected and from which whosoever first visit with chief complaint of pain data were gathered. The collected Data was then subjected to statistical analysis using spss version 20.0. Overall prevalence of chief complaint of pain during first visit was (96.5%). Among first dental visit with pain about 47.2 % was seen in the age of 6-8 years while the least was (14.0%) seen at the age of 11-13 years. The results proved that many parents were unaware about the right age of the child first dental visit. Most of the parents brought their children to the dentist after their child experienced or suffered from pain. There is a need to raise awareness about the importance of oral health care of their children sensitively at the budding stage of life.

**Keywords:** Age; children; first dental visit; pain

## INTRODUCTION

The American Academy of Paediatric Dentistry (AAPD) and the American Dental Association (ADA) recommended that 'a child should visit the dentist within six months of eruption of the first primary tooth and should not be later than 12 months of age. (American Academy of Pediatrics. Committee on Psychosocial Aspects of Child and Family Health and Task Force on Pain in Infants, Children, and Adolescents, 2001) (Govindaraju, Jeevanandan and E. M. G. Subramanian, 2017a) (Ravikumar, Jeevanandan and Subramanian, 2017) Every child should get an early regular dental visit as it is an important step in educating a child with a healthy habit. The first dental visit should occur after the first tooth erupts and should not be delayed later than the child's first birthday. The American Academy of Paediatrics recommends oral health risk assessment by 6 months of age and establishes the Dental Home for all infants by 12 months. (Houpt, 2003; Govindaraju and Gurunathan, 2017; Subramanyam *et al.*, 2018) The goal of dental visit at the early age is for preventive education. First year of dental visit helps to

give anticipatory guidance and establish a dental home. An early dental visit will aid the dentist to notice early lesions, evaluate craniofacial and dental development, provide anticipatory guidance, parent counselling, diet counselling and encourage parents towards prevention (Meera *et al.*, 2008; Jeevanandan, 2017; Panchal, Jeevanandan and Subramanian, 2019). The timing of the first dental visit was found to differ in different countries. (Slayton *et al.*, 2002; Somasundaram *et al.*, 2015; Nair *et al.*, 2018). As oral health promotion for the very young needs to be directed at their mothers, it has been suggested for a dental visit around the 4<sup>th</sup> month of intrauterine life. This will help in educating expectant mothers on the importance of an early dental visit for the child as per the recommendations. (Furze and Basso, 2003; Somasundaram *et al.*, 2015; Jeevanandan and Govindaraju, 2018) (Govindaraju, Jeevanandan and E. M. G. Subramanian, 2017b; 'Fluoride, Fluoridated Toothpaste Efficacy And Its Safety In Children - Review', 2018)

According to the International Association for the Study of Pain, "Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage". Awareness of pain in paediatrics is complex, and involves physiological, psychological, behavioural, and developmental factors (Srouji, Ratnapalan and Schneeweiss, 2010; Gurunathan and Shanmugaavel, 2016; Packiri, Gurunathan and Selvarasu, 2017). Fewer literature have shown parents bring their child to the dentist. Pain in children is underestimated. Many studies have shown parents bring their child to the dentist only when there is pain or when a problem is at a very late stage and under treated (McGrath and Frager, 1996). Familiarization with the dental environment at an early age is helpful in reducing a child's dental anxiety. It provides an opportunity for parents to address their concerns and questions regarding their child's oral care. (Poulsen, 2003; Jeevanandan and Govindaraju, 2018), (Christabel and Gurunathan, 2015).

Prevention and early dental examination give paedodontists the opportunity to educate parents with risk-based anticipatory guidance. These will also decrease the invasive restorative interventions when disease is already present. (of Pediatric Dentistry and Others, 2007; Ravikumar, Jeevanandan and Subramanian, 2017) (Govindaraju, Jeevanandan and E. Subramanian, 2017). Hence, the main aim of this study was to assess the correlation between first dental visit and pain based on age and gender.

## **MATERIAL AND METHOD**

A retrospective study was conducted in Saveetha dental college and hospital. Ethical clearance was obtained from the institutional ethical committee. (SDC/SIHEC/2020/DIASDATA/0619-0320). Data was gathered by reviewing the case sheets of patients visited from June 2019 to March 2020. Children less than 13 yrs of age were included in the study. Patients with past dental experience were excluded from the study - A total of 1000 patient's case sheets were reviewed from which 518 patients were collected who had their first dental visit without any past dental history their chief complaint was verified in the records also telephonic cross verification was done by 2 examiners. 500 patient's chief complaint was only found to be pain during first dental visit which was considered for analysis.

The data were entered and analysed using IBM SPSS software (version 21; IBM Corporation, Armonk, NY, USA). Descriptive statistics (e.g., frequencies and percentages) were calculated to explore the general features of the data. A cross tabulation analysis was done to examine the categorical variables, and Pearson's chi-squared test was used to identify any significant differences between the dependent and independent variables. To determine the significance, the level was set to  $p < 0.05$ .

## **RESULTS AND DISCUSSION**

Overall 518 patients had reported for their first dental visit of which 500 reported with pain. (Figure 1) Out of 500 children, (56.8%) were male, (43.2%) were female (figure 2).

Majority of children who visited the dentist were of age 6-8 years (47.2%) followed by children of age 9-11 years (38.0%). Very few children (14.0%) of age 11-13 years visited the dentist shown in figure 3. The

present study revealed a very late visit of the child to the dentist. The longer a child's initial dental visit is prolonged, the more likely the children are to develop serious dental issues. The present study showed a low awareness level among parents, as the majority of children were brought for their first dental visit at 6-8 years of age and the reason for seeking dental care was pain. From this study, it was evident that in this part of Tamil nadu , parents bring their children for a dental visit only when the child has pain which is apparent and severe.

In the age group of 6-8 years ,25.0% were males and 22.2% were females with first dental visit of pain .In the 9-11 years age group 22.6% were males and 15.4% were females. The least being recorded was in the age group of 11-13 years, 9.2% was male and 5.6% was female shown in figure 2. There was no statistically significant association in the first dental visit with pain between age and gender.(Figure 4)

### **First dental visit with pain:**

Pain was the main reason for the child's first visit in the current study. Other studies conducted in Saudi Arabia have also accepted that parents visit the dental hospital only if their children had pain (Wyne and Khan, 1998; Al-Shalan, Al-Musa and Al-Khamis, 2002; Al-Shalan, 2003) Results of other studies conducted in different parts of the world reflect the same attitude, with pain reported as the dominant factor prompting parents to seek first dental appointments for their children (Meeraet *al.*, 2008; Oliva, Kenny and Ratnapalan, 2008; Ghimire, Kayastha and Nepal, 2013)reported that most children's first visit was associated with pain in accordance with this study.The results of these previous studies clearly demonstrate parent's universal reluctance to take their infants to visit the dentist at a young age as recommended by the dental academies. In our study among 518 children with first dental visit, 500 children had a painful history of first dental visit giving a prevalence of first dental visit with pain (96.5%) which is in accordance to the above studies.

### **First dental visit with pain based on Gender :**

Most of male children in the current study visited dental clinics for the first time but in (Olatosiet *al.*, 2019)reported that more females visited dental clinics for the first time. Possible reasons could be the geographic location, patient's education level and socio-economic status. In this study no correlation between gender and first dental visit with pain was found ,but males are addressed more in the current study as males present with more dental problems and have more dental caries.(Shaffer *et al.*, 2015).In this study though there was increased males reported with first dental visit with pain there was no statistical significant difference among genders ( $p > 0.05$ )

### **First dental visit with pain based on age groups:**

The age at which the child first visits the dental hospital varies on many factors such as parents' socioeconomic status, level of education, and previous dental experience, and governmental and geographic factors. Most of children in the current study visited dental clinics for the first time between the ages of 6 to 8 years but in(Al-Shalan, Al-Musa and Al-Khamis, 2002; Al-Shalan, 2003)reported that parents in Saudi society believed that dental visit before the age of 1 year was inappropriate, with the majority preferring an age range of 3–6 years for the first dental visit.

Perceptions about the suitable age for first dental visit throughout the world are remarkably different; the most commonly reported age range is 2–5 years(Agostini, Flaitz and Hicks, 2001),(Farid, Khan and Aman, 2013)(Ismail and Sohn, 2001; Nainar and Straffon, 2003; Mileva and Kondeva, 2010)(Savage *et al.*, 2004; Rodrigues Gomes, Barretobezerra and Maia Prado, 2013) However,(Meeraet *al.*, 2008) reported pain as the child's first dental visit between 6–12 years from India and Nepal, respectively which is in accordance with this study. Possible reason being geographic location.

Some authors recommend that the first dental visit should be around the fourth month of intrauterine life. During this visit the dentist have the opportunity to explain the importance of dental visit at 6 months of

age, educate the mother or parents on eruption of teeth and preventive procedures, provide diet counselling.(Meeraet *al.*, 2008).Though in this study the maximum age group affected was 6-8 years for first dental visit with pain there was no statistically insignificant difference among age groups( $p > 0.05$ )

In this present study, awareness of the first dental visit for a child was found to be low as the majority of children who visited started at the age of 6-8 years of age. No child below 6 years visited the dentist. So, organising oral health camps, school oral health programs, campaigning, advertisement and education on when the child's first visit should be in the media will surely encourage the parents. Also, Parental compliance with their children's initial dental visit at the standard age recommended by the major dental academics is lacking. The recommendation of early dental visitation at around 6 months of age may have not been distributed or advertised as widely as needed among parents in tamilnadu communities. Only because the child had dental pain it was the sole reason for visiting the dental clinic indicates that most parents would not even bring their children in for a dental visit at all if it was not for pain. This raises great concerns about the future of oral health. More organised prevention, promotions, and education programs are required to increase the awareness about the importance of first dental visit at the age recommended by the major dental academics.

### Limitations

This study has some limitations that may have affected the results. For example, the sample size could have been longer, different populations could have been taken for comparison.

### CONCLUSION

Within the limitations of this study, the overall prevalence of first dental visit with pain is 96.5% and majority was in the age group of 6-8 years proving that the strong association between first dental visit and pain in children.

### AUTHOR CONTRIBUTION

**Sarojini Ramya Pillay**, contributed in the concept, acquisition of data, analysis, interpretation of the data and also in drafting the article and revising it critically for important intellectual content.

**Jessy P**, contributed in the study design, correction, alignment and supervision

**Remmiya Mary Varghese**, contributed in format and alignment and final approval of the submitted version of manuscript

**CONFLICT OF INTEREST** Author has no known conflict of interest associated with this study.

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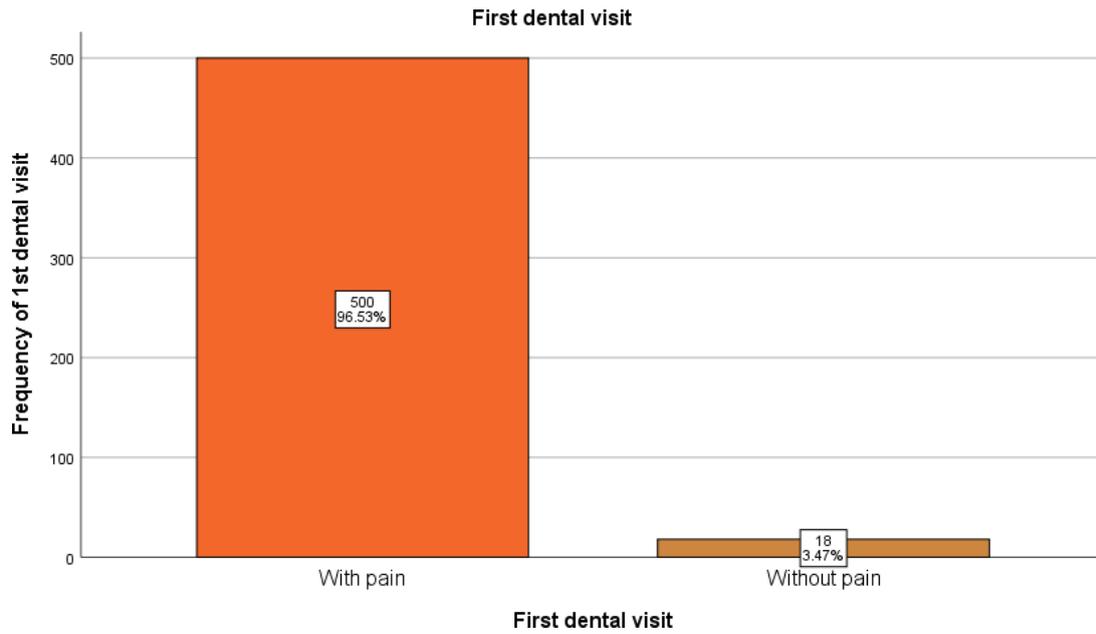


Figure 1 :Bar diagram representing first dental visit.X axis represents first dental visit and y axis represents the frequency of first dental visit.Orange denotes first dental visit with pain and brown denotes first dental visit without pain.96.53% had their first dental visit with pain and 3.47% had their first dental visit without pain.This shows that the majority of children first dental visit was only with pain.

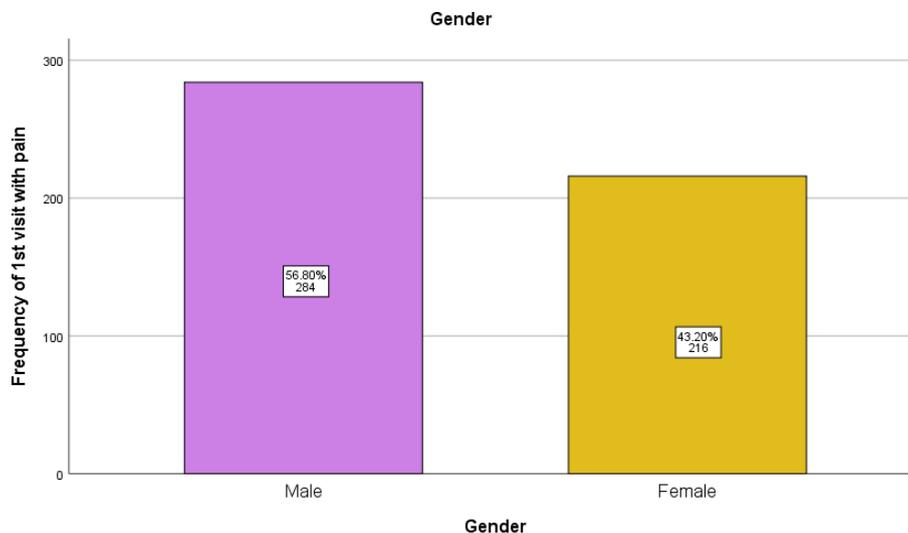


Figure 2: Bar diagram representing gender distribution of first dental visit with pain where X axis represents gender and Y axis represents frequency of 1st visit with pain. Purple denotes male and yellow

denotes female. Majority of the children were males (56.80%) and females were (43.20 %). This shows an increase in the number of males who visited with pain first time when compared to females.

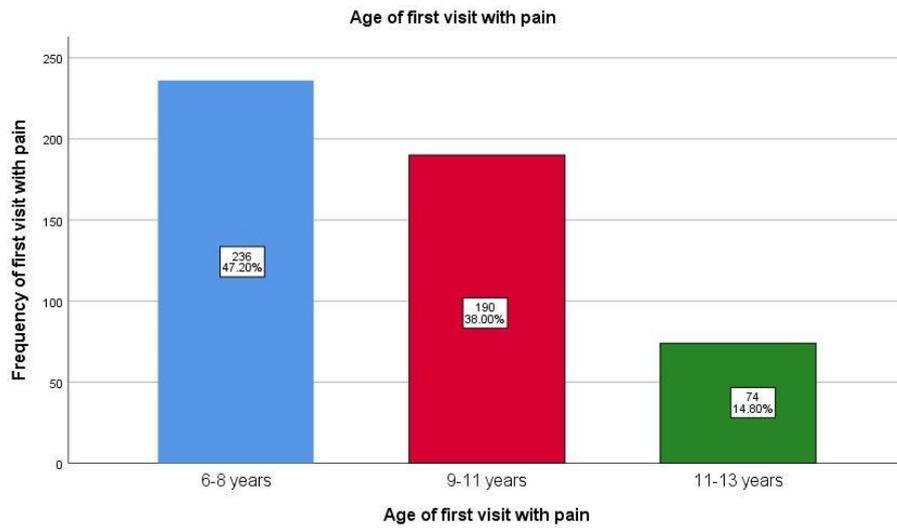


Figure 3: Bar diagram representing different age groups of the first dental visit with pain .X axis represents age of first visit with pain and Y axis represents frequency of first visit with pain. Blue denotes 6-8 years, red denotes 9-11 years and green denotes 11-13 years. Majority of first dental visit with pain was in the age group of 6-8 years(47.20%) followed by 9-11 years(38.00%) and the least being in 11-13 years (14.80%).

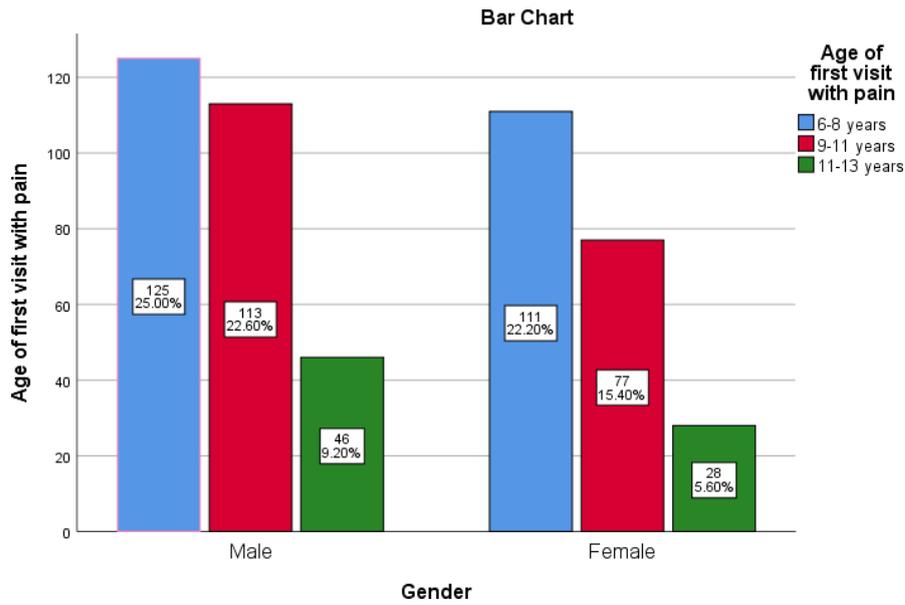


Figure 4 :Bar diagram representing age of first dental visit with pain based on gender, where X axis represents age of first visit with pain and Y axis represents the frequency of how many children visited with pain the first time.Majority of the pain in the first dental visit was in the age group of 6-8 years in both male and female,There is no significant association between gender and age of first dental visit with pain,Pearson chi square value 2.834 , P value 0.242 (>0.05)which showed statistically not significant.