

# ASSOCIATION OF AGE AND GENDER OF PATIENTS WHO UNDERWENT REATTACHMENT OF FRACTURED TEETH

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## ABSTRACT

Epidemiological studies indicate the annual incidence of dental trauma globally is at about 4.5%. Approximately one-third of children and toddlers (primary teeth) and one-fifth of adolescents and adults (permanent teeth) sustained a traumatic dental injury. The aim of the study is to evaluate the association of the patients undergoing reattachment of fractured teeth and compare the age and gender of the patient. The majority involved the maxillary central incisors, mainly from falls in toddlers at home and contact sport in adolescents. It is a retrospective study. The details of the patient records were reviewed and analyzed from June 2019 to March 2020 out of which data of 10 patients who had undergone fractured tooth reattachment were included in this study. The details like age, gender, tooth number were evaluated and entered in SPSS, version 23. It is observed that there is no significant difference among age and sex of the patient who underwent reattachment of fractured teeth. Within the limitation, males had undergone more attachment procedures than females. Endodontic approach was most prevalent in all age groups while conservative approach was prevalent only in 20 to 40 years age group.

**Key words:** Conservative approach; Endodontic approach; Fractured tooth; Reattachment; Traumatic injury,

## INTRODUCTION

Traumatic dental injury is the most destructive and agonising emergencies that are presented in dental practice. Dental trauma is an impact to the teeth and/or hard or soft tissues within and surrounding the vicinity of the oral cavity (Bastone, Freer and McNamara, 2000; Lam et al., 2008). The patient's social and psychological well-being are disturbed and impacted by dental trauma (Abdulkhayum et al., 2014). The most common dental traumatic fracture involves fracture of the coronal portion of anterior teeth among children and adolescents (Macedo et al., 2008; Ramanathan and Solete, 2015).

The most affected teeth are upper incisors due to anterior position and protrusion caused by the eruptive process (DiAngelis and Jungbluth, 1992; Ramamoorthi, Nivedhitha and Divyanand, 2015). Factors

influencing the management of coronal tooth fractures are biological width violation, Endodontic involvement, pattern of fracture, presence or absence of fracture fragments, restorability of tooth, occlusion and aesthetics (Olsburgh, Jacoby and Krejci, 2002) . Tooth fragments reattachment provides convincing and long-lasting aesthetics in patients as they can regain their original anatomical form, colour, surface texture and it does simple procedure(Reis *et al.*, 2002; Noor and Others, 2016; Rajendran *et al.*, 2019; Teja and Ramesh, 2019) .

The Reattachment of fracture teeth should be given as your first choice to the patient as it can restore the natural esthetics and function. The good prognosis depends mainly on the patients cooperation and understanding about the limitations of the treatment (Kumari *et al.*, 2012; Janani, Palanivelu and Sandhya, 2020). In this study we are going to evaluate about the prevalence of the patients undergoing reattachment of fractured teeth and compare the age and gender of the patient.

## **MATERIALS AND METHODS**

### **Study setting**

The study is University Setting, conduct an Saveetha dental College. Predominantly, the pros of the study, flexibility and less time consumption. The limitations of the study, it is restricted to certain population 10. Patients who underwent the attachment of fracture teeth are included in the study . Approval was obtained from the institutional committee ( IEC). Two examiners were involved in the study.

### **Sampling**

Dental records of 86000 patients who had visited a private dental hospital from June 2019 to March 2020, located in Chennai, Tamil Nadu, India were retrieved manually and analysed. Totally 10 case sheets were filtered from the available data. Cross verification of data for error was done by presence of additional reviewers and by photographic evaluation. Simple simple random sample and was done to minimise the sampling bias. It was generalised to the South Indian population. The ethical clearance for the study was obtained from the institutional research SDCC/SIHEC/2020/DIASDATA/0619-0320.

### **Data collection and tabulation**

The records of all patients who had dental trauma and underwent fragment attachment were collected from initial to last in the chronological order. The data was Verified based on age, gender, treatment approach. The data was entered in an excel sheet in a methodical manner and was important to SPSS.. Incomplete or sensor data was excluded from the study.

### **Analysis**

IBM SPSS software version 23, was used for data analysis. Independent variables include age, gender and dependent variable includes treatment approach. Descriptive and inferential statistics were used. Descriptive statistics includes the frequency of distribution of age sex and inferential test includes that the chi Square test.

## **RESULTS AND DISCUSSION**

Out of 10 patients 8 of them were males and remaining 2 were females. The highest case was recorded between the age group of 21-40 years and conservative approach was frequently performed in that age group. On overall consensus there were 6 endodontic approach and 4 conservative approach was performed.

On analysing the relation between gender and the type of treatment provided ( table 1), it is observed that out of 8 males, 4 of them had undergone endodontic approach and the remaining 4 had undergone conservative approach. Among the 2 females, both had undergone reattachment by endodontic approach. No significant difference between gender and the type of treatment provided. The p value was 0.197 which is not statistically significant ( p value > 0.05) .

The information about the age and type of treatment provided is depicted in (table 2). The highest reattachment procedure was recorded between 21-40 years age group , in that group 4 conservative and 2 endodontic approach was performed. Following this, 3 cases were recorded in patients less than 20 years and all the 3 were endodontic approach. Only one endodontic approach was recorded in patient aged above 40 years. No significant difference found between age and the type of treatment provided as p value was 0.108. Not statistically significant (p value >0.05) .

The bar chart showing the correlation between gender and treatment provided is given below ( figure 1). 40% of the males had undergone endodontic approach and remaining 40% of them had undergone conservative approach. 20% of females had undergone endodontic approach.

The graph depicted in ( figure 2) explains the relation between age and the type of treatment provided. 60% of them who underwent reattachment procedure were recorded between 21-40 years. 30% of them recorded less than 20 years. 10% of them recorded greater than 40 years of age.

The reattachment of fractured teeth mainly depends on the extent of traumatic injury. If the injury involves the pulp, endodontic approach is carried out. If it is constrained to enamel and dentin then conservative approach is performed (Chu, Yim and Wei, 2000; Thapak, Arya and Arora, 2019). Studies have reported that the primary cause of fragment loss is new dental trauma or on physiological use of restored tooth (Andreasen et al., 1995; Siddique et al., 2019). Therefore most concerns about reattachment technique have been directed towards the fracture strength of restored tooth (Farik, Munksgaard and Andreasen, 2000; Teja, Ramesh and Priya, 2018; R, Rajakeerthi and Ms, 2019).

The main advantage of reattachment is, it eliminates the problem of wear of restorative material, mismatch of shades, contour and texture reproduction . In this study almost 90% of the population belonged to younger adult group who underwent reattachment procedure due to traumatic injury. This is in consent with the study done by Georgia et al where she stated coronal fractures were most commonly seen in adolescent and children (Macedo et al., 2008; Hussainy et al., 2018; Nasim and Nandakumar, 2018). In the study done by lam et al, In his cohort reported that, 92% of injuries occurred before the age of 34 years (Lam, 2016; Kumar and Delphine Priscilla Antony, 2018; Ravinthar and Others, 2018). Several other studies indicating that dental trauma is skewed to the younger and likely more physically active population (Glendor et al., 1998; Bastone, Freer and McNamara, 2000; Andersson, 2013), (Glendor, 2008; Jose and Subbaiyan, 2020)

Patel et al in their study have found that , girls ratio was 1.28:1 that showed that males are more prone to traumatic injuries than females and it was found to be statistically significant (Patel and Sujana, 2012; Manohar and Sharma, 2018). This is in consent with our study, here males to female ratio was 4:1 which showed the higher prevalence of males who underwent dental trauma. Similar findings were observed by many studies (Gaubha, 1967; Gupta, Tandon and Prabhu, 2002; Ravishankar et al., 2010). The higher percentage of traumatic injuries in the boys could be attributed to the fact that boys engage in leisure activities or sports of a generally more aggressive nature or with a greater accident risk than the girls do and that they have delayed maturation rates.

## CONCLUSION

Within the limitation of the study, we can contemplate that males had undergone more reattachment procedure and the predominant age group were 21-30 years patient. The endodontic approach was highly performed, this indicates that the traumatic dental injuries involved pulp damage, so pulpectomy / pulpotomy procedures are performed followed by reattachment of fractured tooth fragment using acid etch technique.

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Age Group	Treatment Name		Total	Chi square value	P Value
	Reattachment Endodontic Approach	Reattachment Conservative Approach			
<20	3	0	3	4.444	0.108
21-40	2	4	6		
>40	1	0	1		
<b>Total</b>	<b>6</b>	<b>4</b>	<b>10</b>		

Table 1: Depicts the relation between gender and the type of treatment provided. The p value was 0.197 which is not statistically significant ( p value > 0.05).

Gender	Treatment Name		Total	Chi square value	P Value
	Reattachment Endodontic Approach	Reattachment Conservative Approach			
Male	4	4	8	1.667	0.197
Female	2	0	2		
<b>Total</b>	<b>6</b>	<b>4</b>	<b>10</b>		

Table 2: Depicts about the age and type of treatment provided. No significant difference was found between age and the type of treatment provided as p value was 0.108. Not statistically significant (p value >0.05).

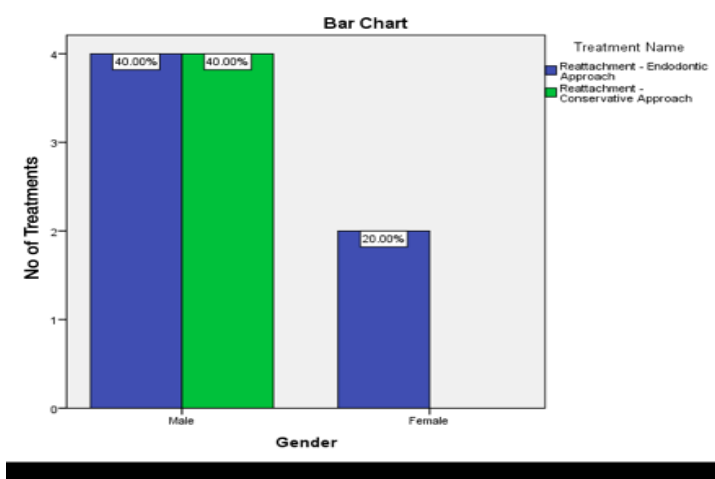


Figure1: The bar chart showing the correlation between gender and treatment provided. X- axis represents Gender and Y-axis represents Number of Treatments. From this graph it can be inferred that both male and female patients preferred reattachment - Endodontic approach (Blue) than reattachment - conservative approach (green). It was found that there was no statistical significance among gender and the treatment approach towards fracture reattachment. The p value was 0.197 which is not statistically significant ( p value > 0.05).

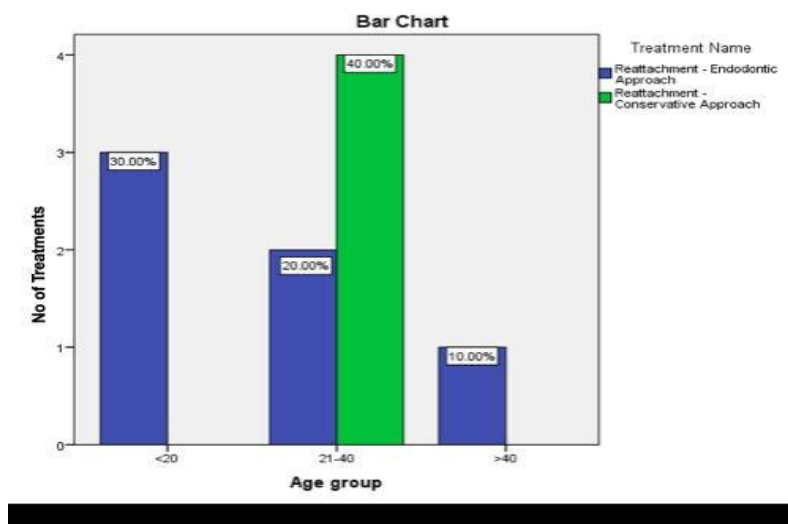


Figure 2: The graph explaining the relation between age and the type of treatment provided. X axis represents age group and Y axis represents number of treatments. From this graph it can be inferred that reattachment- conservative approach (blue) were higher in the age group of 21-40 compared to age group >40 who underwent reattachment conservative approach (Green). No significant difference found between age and the type of treatment provided as p value was 0.108. Not statistically significant (p value > 0.05).