

## Original Research

### Assessment of pattern of TDI in children- A clinical study

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**Background:** Dental trauma in addition to causing pain and loss of function has the potential for periapical sequelae. The present study was conducted to assess pattern of TDI in children. **Materials & Methods:** The present study was conducted on 120 children age ranged 5-10 years of both gender. A through oral examination was done in all children. Type of fracture was noted. **Results:** Out of 120 children, 70 were boys and 50 were girls. Enamel fracture was seen in 20. Enamel and dentin in 40, enamel, dentin and pulp in 25, non vital tooth in 15 and tooth loss in 20. The difference was significant ( $P < 0.05$ ). **Conclusion:** Authors found that maximum type of TDI was involving enamel and dentin followed by enamel, dentin and pulp.

**Key words:** Dental trauma, Children, Enamel

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#### INTRODUCTION

Traumatic dental injuries (TDI) are the most overlooked oral conditions regardless of their high prevalence rate and associated impact on children. Dental trauma in addition to causing pain and loss of function has the potential for periapical sequelae, which can adversely affect the development of the permanent teeth as well as the developing occlusion.<sup>1</sup> Epidemiological data showed a wide variation in the prevalence of dental injuries in children. Dental injuries to the deciduous teeth can result in problems to the underlying permanent teeth, such as hypoplasia, discoloration, and delay in eruption time, and tooth malformation. Along with pain and possible infection, the consequence of dental trauma includes alteration in physical appearance, speech defects, and emotional impacts; thus, affecting the child's quality of life.<sup>2</sup>

TDI to primary teeth may eventually create problems to the underlying permanent teeth, such as hypoplasia, discoloration, delay eruption time, and tooth malformation. Preschool children are more prone to TDI due to their poor stability, passive reflexes, and indefinite movements.

Predisposing factors to TDI include physical features such as increased incisal overjet, open bite, protrusion, and lip incompetence.<sup>3</sup>

In many countries, high cost, low standard of living, and lack of knowledge regarding urgent treatment of dental trauma may result in delaying the treatment. Studies of TDIs among the preschool children are of paramount importance, as individuals with previous trauma in the primary dentition are prone to further trauma in the permanent dentition.<sup>4</sup> The present study was conducted to assess pattern of TDI in children.

#### MATERIALS & METHODS

The present study was conducted in the department of Pedodontics. It comprised of 120 children age ranged 5-10 years of both gender. Ethical clearance was obtained prior to the study. Consent was obtained from parents of all children before the procedure.

Information such as name, age, gender etc. was recorded. A through oral examination was done in all children. Type of fracture was noted. Results thus obtained were subjected to

statistical analysis. P value less than 0.05 was considered significant.

**RESULTS**

**Table I Distribution of patients**

Genders	Boys	Girls
Number	70	50

Table I shows that out of 120 children, 70 were boys and 50 were girls.

**Table II Type of TDI**

Type	Number	P value
Enamel	20	0.05
Enamel+ Dentin	40	
Enamel+ Dentin+ Pulp	25	
Non vital	15	
Tooth loss	20	

Table II, graph I shows that enamel fracture was seen in 20. Enamel and dentin in 40, enamel, dentin and pulp in 25, non vital tooth in 15 and tooth loss in 20. The difference was significant (P< 0.05).

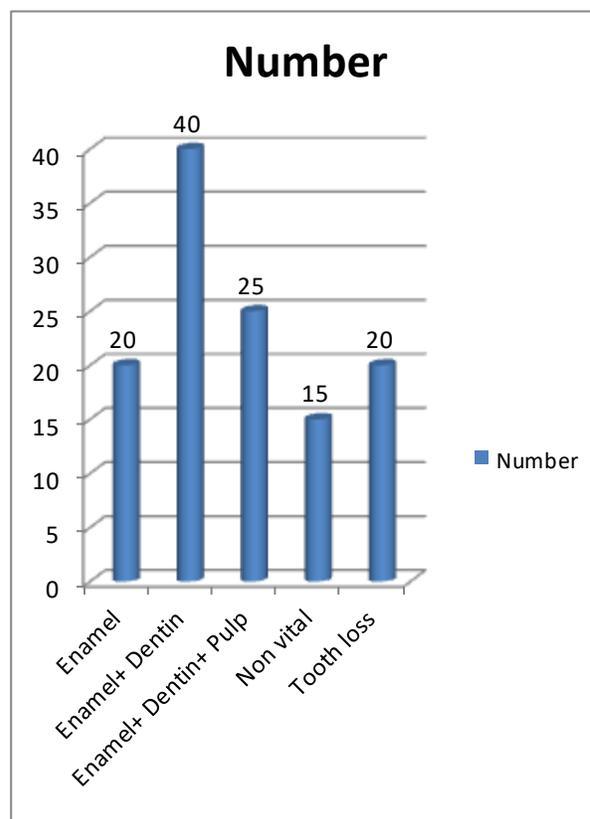
**DISCUSSION**

A correlation between low socio-economic status and high prevalence of dental trauma has been emphasized. Reports also highlighted that children of parents with low educational level tend to have increased rate of dental trauma. However, the clarification on impact of socio-economic status of the parents or their educational level is still under investigation.<sup>5</sup> Parents and home environment have a significant impact on the perception and attitude towards oral health among young children. Delaying the treatment of the dental injuries in children are common in many countries. This can be attributed to various factors such as short-lived primary dentition, memory bias, and lack of required attention because the child might not show any associated sign or symptom. Other determinants such as high cost, low standard of living and lack of knowledge also play a vital role.<sup>6</sup>

In present study out of 120 children, 70 were boys and 50 were girls. Enamel fracture was seen in 20. Enamel and dentin in 40, enamel, dentin and pulp in 25, non vital tooth in 15 and tooth loss in 20. The difference was significant (P< 0.05). Al-Majed et al<sup>7</sup> found that the prevalence of anterior dental trauma and its associated factors among 800

preschool children aged 3 to 5 years. Traumatic dental injuries (TDI) were assessed and recorded based on Andreasen's classification. Associated factors such as sex, socioeconomic status (SES), and the type of injury were also analyzed. An overall 10.2% prevalence of TDI was observed among the study population. TDI were reported to be more among male children (11.87%) compared to female children (8.14%). Enamel fractures (69%) were the most prevalent type of anterior dental trauma. Upper central incisors were the most frequently affected. The SES of the parents had little influence on the prevalence of TDI. The prevalence rate of dental trauma among children aged 3-5 years was 10.2%. Associated factors, such as SES, were observed to be not significantly correlated to dental trauma among the studied preschoolers.

**Graph I Type of TDI**



TDI range from minor fractures of the enamel to major damage involving the displacement or avulsion of teeth. The prevalence of TDI in primary teeth ranges from 9.4% to 71.4%. Of all the dental injuries that occur before 30 years of age, 50% occur before the age of 10 with the peak being between 2-4 years. However comparisons between studies should be performed with caution due to the lack of uniformity in the samples, clinical diagnostic criteria, location of the study, and age groups.<sup>8</sup>

Relatively high prevalence of TDIs in our study could be due to the increased number of private schools when compared to government schools. This increases the risk of subjecting children to more trauma. As most of the private schools do not follow the standard of an ideal school environment and they build or rent small area in floor building, the space is limited for the children to play free, which leads to crashes with each other. However, this assumption contradicted the result made by Singh et al., where the prevalence of TDIs among preschool children was low (4.10%) and they interpreted due to the relative lack of outdoor activities and more emphasis on education.<sup>9</sup>

## CONCLUSION

Authors found that maximum type of TDI was involving enamel and dentin followed by enamel, dentin and pulp.

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