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Survey On Traumatic Dental Injuries Among Children

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ABSTRACT

Traumatic dental injuries are the most common problems and have the highest prevalence rate among children. Dental trauma not only causes pain but also has the potential to adversely affect the development of the permanent teeth. Tooth fractures or dental injuries to the deciduous teeth can cause various problems in permanent teeth such as hypoplasia, discoloration, and delay in eruption time, and tooth malformation. A self administered questionnaire was designed based on the awareness of tooth fracture and dental trauma among the children and was distributed through an online survey planet link. The study population was 100 . The collected data were plotted in the form pie charts. The responses were plotted in the form of pie charts. In this study, the prevalence of traumatic dental injuries was found to be 77.2% and only 50.6% of the children had been taken to a dentist after the dental trauma. From this study it is evident that the majority of the children have experienced dental trauma due to which they have low self confidence and face other kinds of problems in their day to day life. Thus it is important for the parents to take them to a dentist immediately after the trauma to avoid furthermore complications and infections.

Keywords: Traumatic dental injury, children, pain, problems

INTRODUCTION

Traumatic dental injuries are the most common problems and have the highest prevalence rate among children (Andersson, 2013). The trauma to the teeth may be varied from a minor chip in the enamel to a serious avulsion of the tooth. A minimal chip or fracture in the enamel does not create any pain or psychological fear in children but with severe injuries involving pulp may elicit devery pain and it requires immediate intervention to relieve pain and to save the fractured tooth, this may cause severe psychological fear in young children. The more severe damage can be caused by avulsion where the tooth completely comes out of the socket, which requires replantation done within hours under proper specialist supervision to make the natural tooth to be positioned in its place again. The replantation of the tooth requires complex clinical procedures and it depends on how the avulsed tooth was handled from the time of avulsion till medical intervention has taken place. So it is essential for parents of the children to know how to handle a child and the avulsed tooth until it is planted in the socket again. (Andreasen *et al.*, 1995; Raof *et al.*, 2012)

The most common reasons for traumatic dental injuries are increased over jet with protrusion and inadequate lip coverage (de Paiva *et al.*, 2015) Dental trauma not only causes pain but also has the potential to adversely affect the development of the permanent teeth (Cortes, Marcenes and Sheiham, 2002) Tooth fractures or dental injuries to the deciduous teeth can cause various problems in permanent teeth such as hypoplasia, discoloration, and delay in eruption time, and tooth malformation (Bijella *et al.*, 1990). A dental trauma can have life long impacts on a child, like speech defects, emotional stress, change in physical appearance thus affecting the quality of a child's life (Chalissery *et al.*, 2016) (Andreasen *et al.*, 2011)

Previously, many studies have been done on traumatic dental injuries among children. A study has reported a prevalence rate of 74.53% in preschool children (5-13-year-old children) (Gojanur, Yeluri and Munshi, 2015). Another study involving preschool as well as school children between the age of 3-16 years reported a prevalence of 5.29% of incisors and canine fractures (Govindarajan *et al.*, 2012) Usually preschool children are more prone to traumatic dental injuries as they have poor stability. Nearly, 50% of the children might have

experienced a dental trauma due to fall or other kinds of accidents (Ellis and Davey, 1970). As soon as a dental trauma has occurred, it is always important to rush to a dentist in order to determine the necessary treatment and avoid other complications in future (von Arx, 1993). Previously, a study has shown that only 5% of the people seek treatments after a dental trauma. The maxillary incisor is the most commonly injured tooth in children (Saraswathi and Kumar, 2018).

this vast research experience has inspired us to research about the traumatic dental injuries among children. Our team has extensive knowledge and research experience that has translated into high quality publications (Choudhari and Thenmozhi, 2016; Govindaraju, Jeevanandan and Subramanian, 2017; Ravi *et al.*, 2017; Vikram *et al.*, 2017; Gupta, Ariga and Deogade, 2018; Hannah *et al.*, 2018; Kavarthapu and Thamaraiselvan, 2018; Pandian, Krishnan and Kumar, 2018; Ramamurthy and Mg, 2018; Ashok and Ganapathy, 2019; Ramesh *et al.*, 2019; Sharma *et al.*, 2019; Venu, Raju and Subramani, 2019; Wu *et al.*, 2019; Samuel, Acharya and Rao, 2020)

Thus it is important to monitor children and immediately rush to the hospitals if any dental trauma has occurred to avoid further more complications. Hence this study is to know the knowledge and awareness of children about dental trauma and the emotional stress they have experienced due to the traumatic dental injuries.

MATERIALS AND METHODS

Approval for the study was obtained from the research committee, Saveetha dental college. A self administered questionnaire was designed based on the awareness of traumatic dental injuries among children from primary school. It is a closed format survey which was posted on an online platform. The questionnaire consisted of 10 questions. Clearance from the ethical committee of Saveetha dental college was obtained with ethical committee registration. The participants were explained about the purpose of this study in detail and the participants marked the corresponding answers. The independent variables were considered as adults, qualification and dependent variables were children, dental trauma. The data was collected and statistically analysed. The results were plotted in the form of pie charts.

RESULTS AND DISCUSSION

In the present study, out of 100 participants 74.7% of the children were aware of dental trauma and tooth fracture while 25.3% of the children were not aware of it (figure 1). 77.2% of the children have experienced dental trauma and 22.8% of the participants did not experience any dental trauma (figure 2). 50.6% of the children have visited a dentist after the trauma and 49.4% of the children did not visit a dentist (figure 3). In this survey, a question was asked on the time duration of visiting a dentist after the dental trauma where 43.3% of the children never visited a dentist, 34.4% of the children visited a dentist the next day and 22.2% of the children visited a dentist immediately after the dental trauma (figure 4). The reason behind the dental trauma was asked to the children where 69.2% of the children had experienced dental trauma while playing, 25.3% of the children experienced dental trauma while fighting and 5.5% of the children experienced dental trauma due to accident (figure 5). Usually after a dental trauma, it is important to rinse the child's mouth with water. Here, 65.2% of children's mouths have been rinsed with water after the trauma (figure 6). 59.8% of the children felt nervous to play after the trauma and 40.2% of the children did not feel nervous to play after the trauma (figure 7). After a dental trauma, it is common to feel uneasy, most of them face difficulty in eating, speaking and experience emotional stress. In this study, 70% of the children felt they were not able to eat properly due to the trauma (figure 8). 83.7% of the children were psychologically disturbed due to the dental trauma and 16.3% of the children were not psychologically disturbed (figure 9). 62.6% of the children were able to speak properly and 37.4% of the children were not able to speak properly after the dental trauma (figure 10).

In previous studies (Bhayya and Shyagali, 2013), the prevalence of traumatic dental injuries was found to be 76.13% which is similar to the present study where the prevalence of dental trauma is 77.2%. In few studies, prevalence of trauma to the anterior teeth was found to be 16.1% (Saraswathi and Kumar, 2018).

Anterior teeth are mostly the most common tooth for tooth fracture to occur in children. In a study done in Jaipur (Chalissery *et al.*, 2016), prevalence of traumatic dental injuries was found to be 10.2% which is comparatively very less than the present study. In this study, 50.6% of the children have visited a dentist after the dental trauma. While in other studies, 97.3% of children remained untreated and only 2.7% of them had undergone the treatment (Saraswathi and Kumar, 2018). Majority of the children in the current study and few published studies have not visited a dentist which could cause many complications in the future. In this study the duration of visiting a dentist after the dental trauma was about 43.3% of the children never visited a dentist, 34.4% of the children visited a dentist the next day and 22.2% of the children visited a dentist immediately after the dental trauma. Which is in contrast with a study conducted by Ritu N in 2014 where 64.4% ($n = 966$) would seek professional advice immediately and 35.6% ($n = 534$) would seek professional advice within 30 min, few hours and before next day. Fig-6 represents the frequency distribution of rinsing the child's mouth with water after the dental trauma where 65.2% of children's mouth have been rinsed with water after the trauma, which is in contrast with the study by Ritu N in 2014 where 46.4% ($n = 697$) would rinse the tooth under tap water for

cleaning it before replantation, six parents would scrub the tooth gently with the tooth brush, 11 parents would place the tooth straight back to the socket without doing other things, 770 parents did not know how to clean and 16 parents would choose other methods like rinsing it with antiseptic solution or wiping it with wet cloth.(Bedford *et al.*, 2020)

Traumatic dental injuries in deciduous teeth can cause many complications in the permanent teeth. Thus it is important for the parents to be cautious and rush to a dentist immediately after any dental trauma.

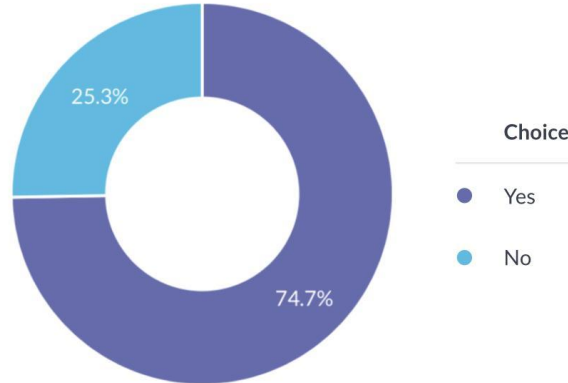


Figure 1 : This pie chart represents the frequency distribution of the awareness about dental trauma among children. 74.7% of the children were aware of dental trauma and tooth fracture while 25.3% of the children were not aware of it.

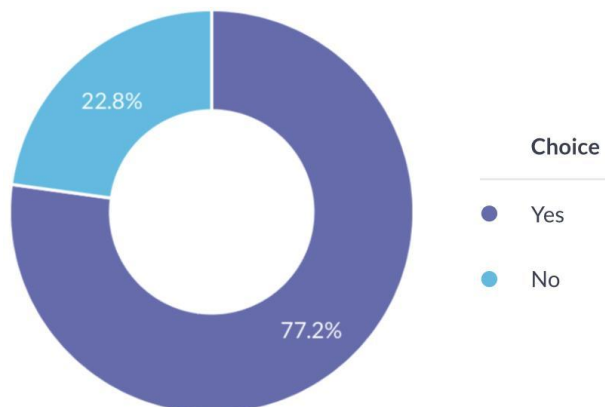


Figure 2 : This pie chart represents the frequency distribution of the children who have experienced dental trauma. 77.2% of the children have experienced dental trauma and 22.8% of the participants did not experience any dental trauma.

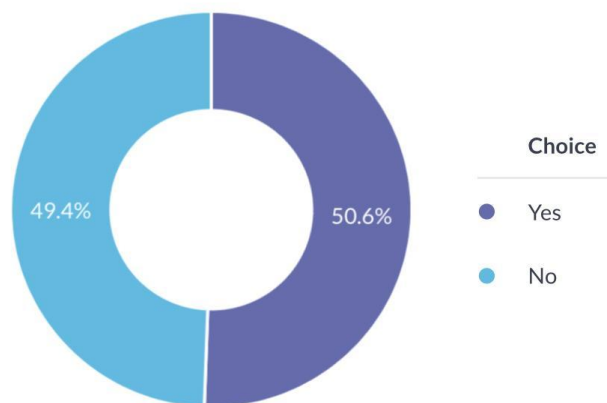


Figure 3 : This pie chart represents the frequency distribution of the children who have visited a dentist after the traumatic dental injuries. 50.6% of the children have visited a dentist and 49.4% of the children did not visit a dentist.

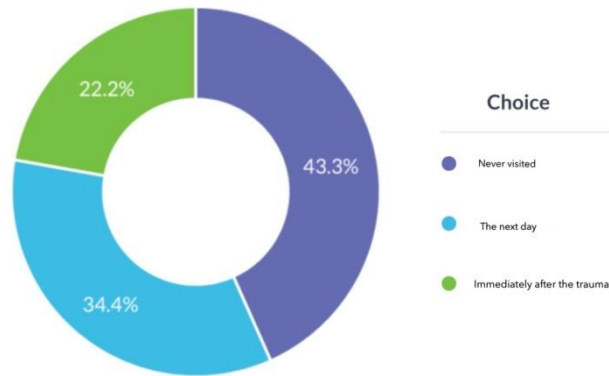


Figure 4 : This pie chart represents the frequency distribution of the duration of visiting a dentist after the dental trauma where 43.3% of the children never visited a dentist, 34.4% of the children visited a dentist the next day and 22.2% of the children visited a dentist immediately after the dental trauma.

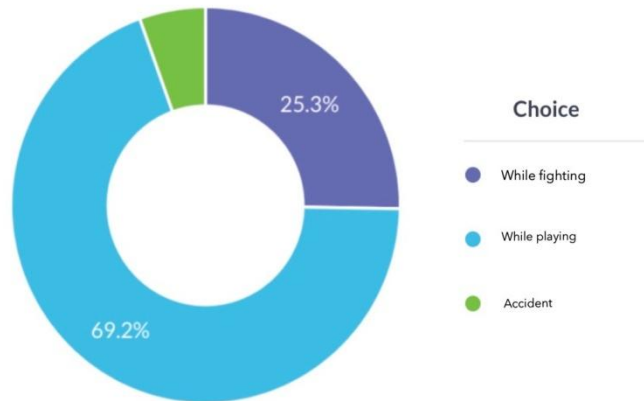


Figure 5 : This pie chart represents the frequency distribution of the reason behind the dental trauma. 69.2% of the children had experienced dental trauma while playing, 25.3% of the children experienced dental trauma while fighting and 5.5% of the children experienced dental trauma due to accident.

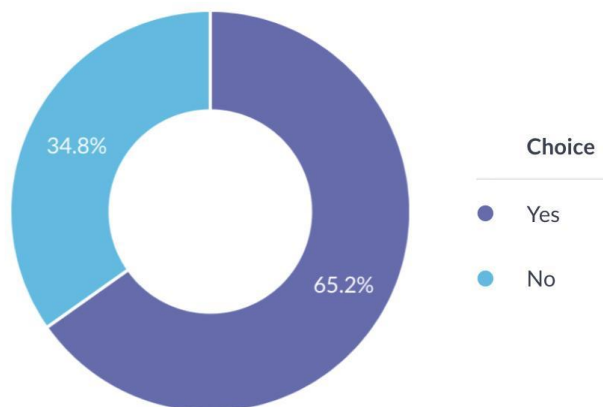


Figure 6 : This pie chart represents the frequency distribution of rinsing the child's mouth with water after the dental trauma where 65.2% of children's mouth have been rinsed with water after the trauma.

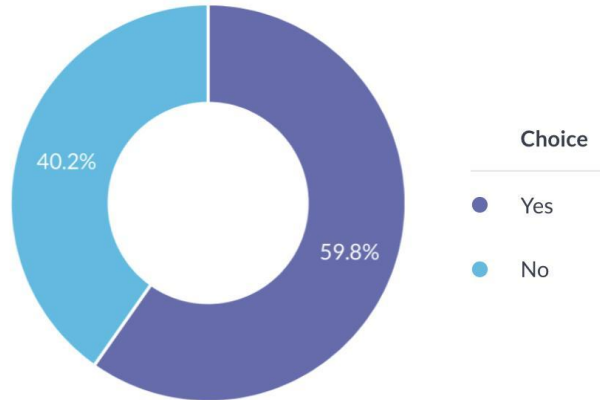


Figure 7 : This pie chart represents the frequency distribution of the children being nervous to go out and play after the dental trauma. 59.8% of the children felt nervous to play after the trauma and 40.2% of the children did not feel nervous to play after the trauma.

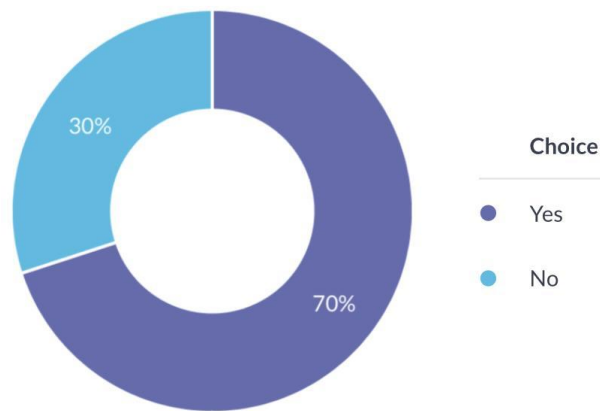


Figure 8 : This pie chart represents the frequency distribution of the child's uneasy feeling due to the dental trauma. 70% of the children felt they were not able to eat properly due to the trauma.

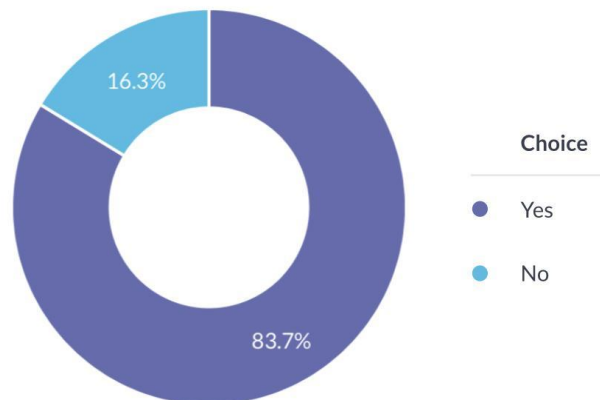


Figure 9 : This pie chart represents the frequency distribution of the children being psychologically disturbed due to the dental trauma. 83.7% of the children were psychologically disturbed due to the dental trauma and 16.3% of the children were not psychologically disturbed.

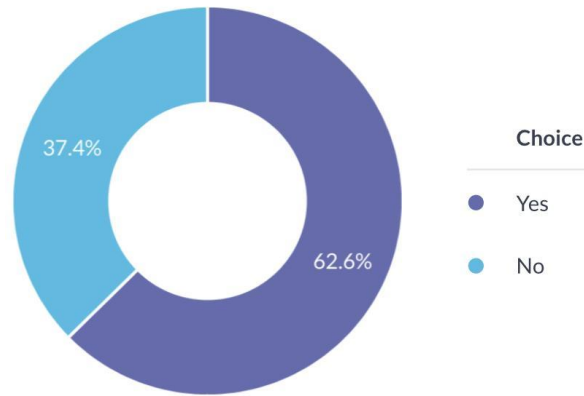


Figure 10 : This pie chart represents the frequency distribution of the ability to speak properly after the dental trauma. 62.6% of the children were able to speak properly and 37.4% of the children were not able to speak properly after the dental trauma.

Although the study was conducted with proper guidelines there are some limitations like limited sample size, responders bias as this is an online survey, sampling error. In future this study can be done by including different areas of schools, students behaviour to have a better understanding about these traumatic injuries in children

CONCLUSION

From this study it is evident that the majority of the children have experienced dental trauma due to which they have low self confidence and face other kinds of problems in their day to day life. Thus it is important for the parents to take them to a dentist immediately after the trauma to avoid furthermore complications and infections.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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