

# PARENTAL AWARENESS OF EMERGENCY MANAGEMENT OF AVULSED TEETH IN CHILDREN IN INDIA

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**RUNNING TITLE:** Parental awareness of emergency management of avulsed teeth in children in India.

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## **ABSTRACT:**

### **AIM AND OBJECTIVE:**

Aim of the study is to assess the knowledge and awareness of emergency management of avulsed teeth in children in India.

### **MATERIALS AND METHODS:**

A cross sectional questionnaire was designed and distributed to 100 parents who visited Saveetha Dental college and hospitals. Questionnaire includes email address, questions about encountering dental trauma, emergency management in case of dental trauma, storage medium for avulsed teeth, possibility of replacing an avulsed tooth, ideal time for replacing an avulsed teeth and storage medium for avulsed teeth. Data was collected, statistically analysed and results were obtained.

### **RESULTS:**

The results observed in our study showed that knowledge and awareness of emergency management of avulsed teeth in children in India was low.

### **CONCLUSION:**

Various awareness programs should be conducted to educate more about dental trauma, management of dental trauma in children, avulsion, and storage medium available for avulsed teeth.

**Keywords:** Avulsion, Storage medium, Dental trauma, Saliva.

## **INTRODUCTION:**

Facial trauma that results in fractured, displaced, or lost teeth can have significant negative impact on functional, esthetic, and psychology of on children (1,2). The greatest incidence of trauma to the primary teeth occurs at 2 to 3 years of age, when motor coordination is developing. The most common injuries to permanent teeth occur secondary to falls, followed by traffic accidents, violence, and sports. All sporting activities have an associated risk of orofacial injuries due to falls, collisions, and contact with hard surfaces (3-5). Traumatic dental injuries represent one of the most common reasons for emergency appointments. Survival of

traumatized teeth is one of the main responsibilities of dentists. However, in severe cases like avulsion injuries, survival of the tooth is not always possible. "Avulsion" is used to describe a situation in which a tooth has been removed from its socket as a result of severe trauma. The treatment of avulsed teeth is very complicated because the periodontal ligament (PDL) fibers, the neurovascular bundle at the root apex, the cement layer of the tooth, alveolar bone, and the gingiva are all damaged. In these circumstances, the prognosis of avulsion cases is very poor and many factors have been thought to affect their success rate. Because of the injury's complicated nature, there are few published studies about the management and prognosis of avulsed teeth (6,7). Avulsion of permanent teeth is the most serious of all dental injuries. The prognosis depends on the measures taken at the place of accident or the time immediately after the avulsion. Management of avulsion is reimplantation but it cannot always be carried out immediately and also reimplantation should not be performed when the primary teeth have been avulsed because of the risk of injury to the underlying permanent tooth germ (8). Appropriate emergency management and a treatment plan are important for a good prognosis. There are also individual situations when replantation is not indicated (eg, severe caries or periodontal disease, an uncooperative patient, severe cognitive impairment requiring sedation, severe medical conditions such as immunosuppression, and severe cardiac conditions) which must be dealt with individually. Although replantation may save the tooth, it is important to realize that some of the replanted teeth have low probability of long-term survival and may be lost or condemned to extraction at a later stage. However, not replanting a tooth is an irreversible decision and therefore saving it should be attempted (9). Aim of the study is to assess the knowledge and awareness of emergency management of avulsed teeth in children in India.

#### **MATERIALS AND METHODS:**

The study was conducted during the academic year december 2018 among the parents who visited Saveetha Dental College and hospital.

#### **STUDY SAMPLE SIZE:**

The descriptive cross sectional study was based among 100 parents.

#### **INCLUSION AND EXCLUSION CRITERIA:**

Parents having children above 1 year were included in this study. Parents who are not willing to participate were excluded in this study.

#### **QUESTIONNAIRE:**

The questionnaire was not targeted at a specific group but all parents in general to assess their awareness and knowledge of emergency management of avulsed teeth in children in India. A validated questionnaire was distributed among the parents in this study. This included questions about encountering dental trauma, emergency management in case of dental trauma, storage medium for avulsed teeth, possibility of replacing an avulsed tooth, ideal time for replacing an avulsed teeth and storage medium for avulsed teeth. The data extracted were tabulated, statistically analysed and results were obtained using SPSS software.

#### **RESULTS:**

Among the study population, majority (79%) of parents have not encountered dental trauma in their children whereas 21% of parents told that they have encountered dental trauma in their children.

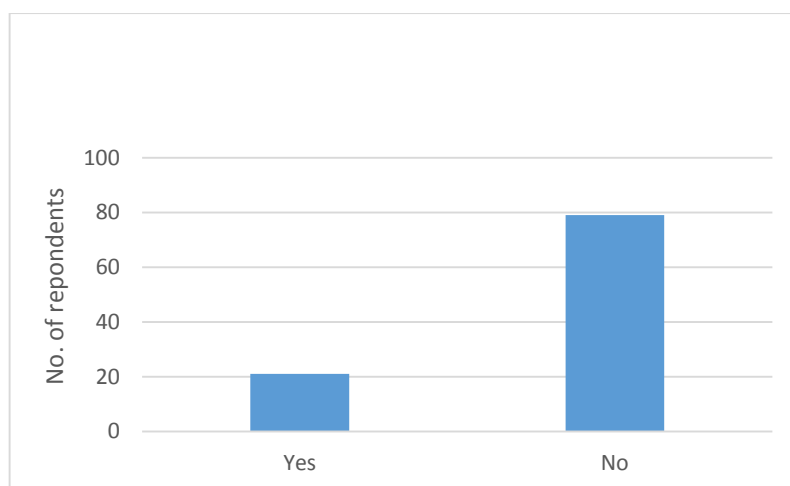


Table 1: Have you ever encountered a dental trauma in a child?

Among the study population, majority (92%) of parents told that they cannot manage in case of dental trauma whereas 8% of parents told that they can do emergency management in case of dental trauma.

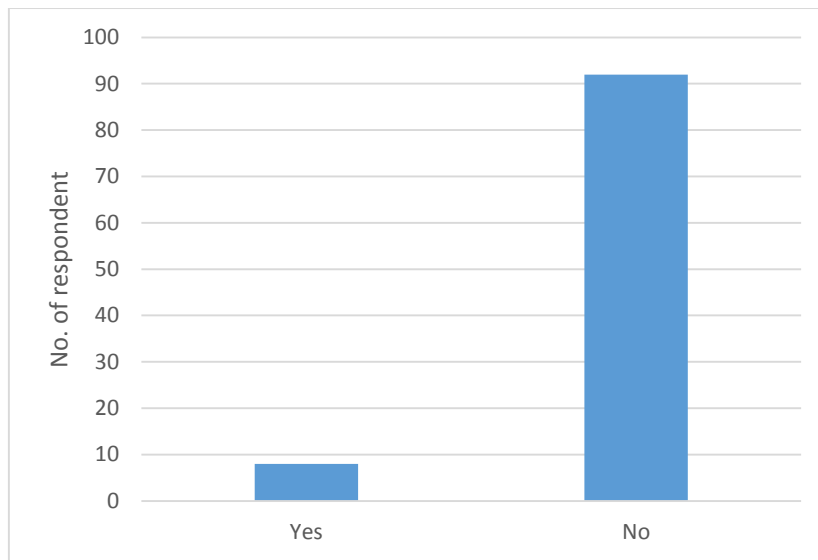


Table 2: Can you do an emergency management in case of dental trauma?

Among the study population, majority (65%) of parents told that it is possible to replace an avulsed tooth whereas 35% of parents told that its impossible to replace an avulsed tooth.

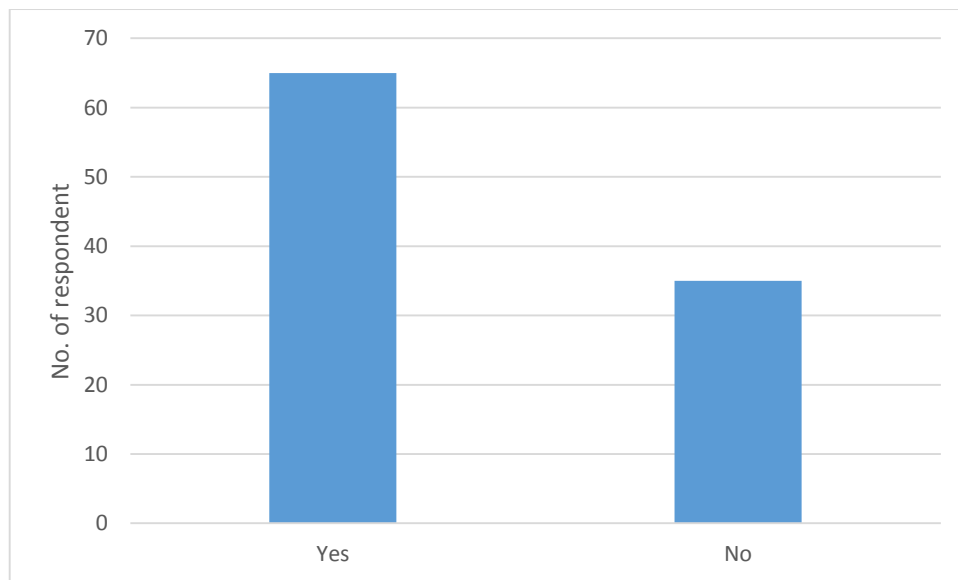


Table 3: Do you think it is possible to replace an avulsed tooth?

Among the study population, majority (89%) of parents not aware of ideal time for replacing an avulsed teeth whereas 11% of parents aware of ideal time for replacing an avulsed teeth.

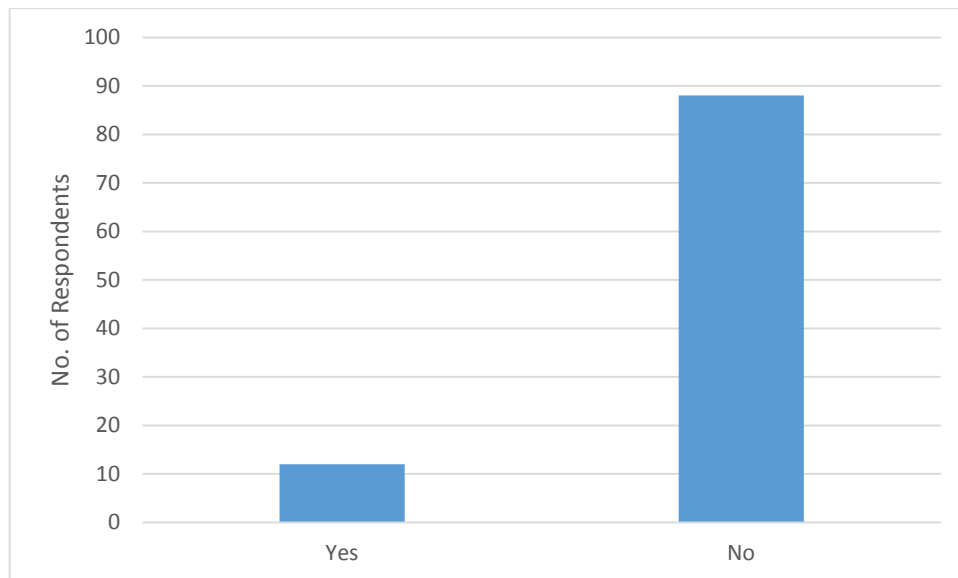


Table 4: Do you know the ideal time for replacing an avulsed tooth?

Among the study population, majority (91%) of parents never thought of storing an avulsed tooth in milk before going to dentist whereas 9% of parents thought of storing an avulsed tooth in milk before going to dentist.

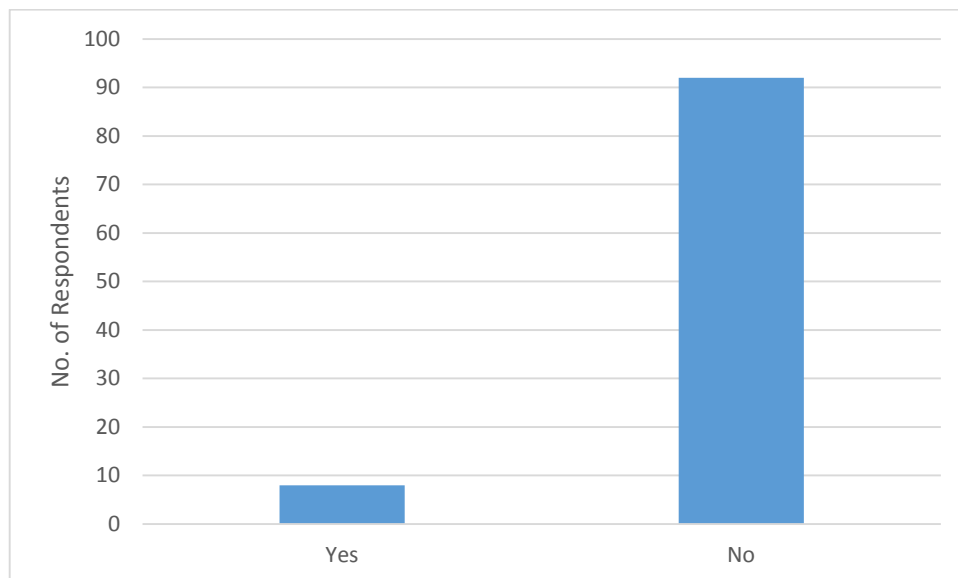


Table 5: Have you ever thought of storing an avulsed tooth in milk till reaching the dentist?

Among the study population, majority (92%) of parents told that coconut water cannot be used as a storage medium for avulsed teeth whereas only 8% of parents told that coconut water can be used as a storage medium for avulsed teeth.

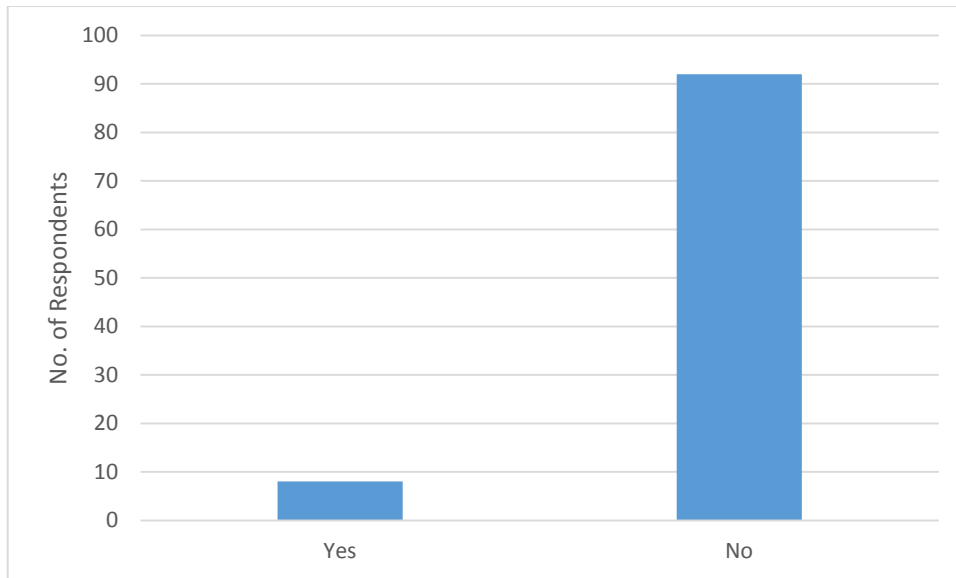


Table 6: Do you think coconut water is a storage media for avulsed tooth?

Among the study population, majority (72%) of parents told that saliva can be used as a storage medium for avulsed teeth whereas only 28% of parents told that saliva cannot be used as a storage medium for avulsed teeth.

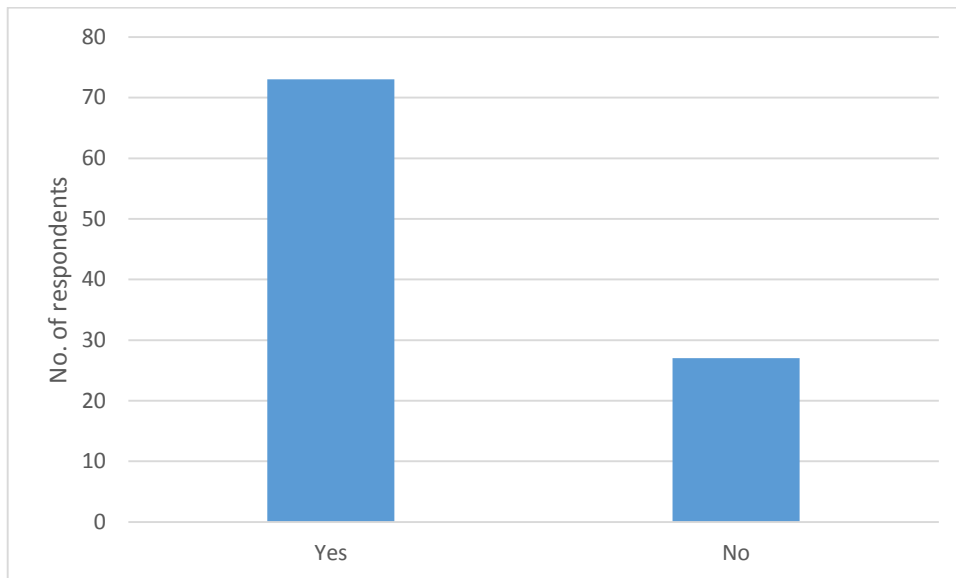


Table 7: Can saliva be used as a storage media for an avulsed tooth?

Among the study population, majority (65%) of parents told that tap water can be used as a storage medium for avulsed teeth whereas only 35% of parents told that tap water cannot be used as a storage medium for avulsed teeth.

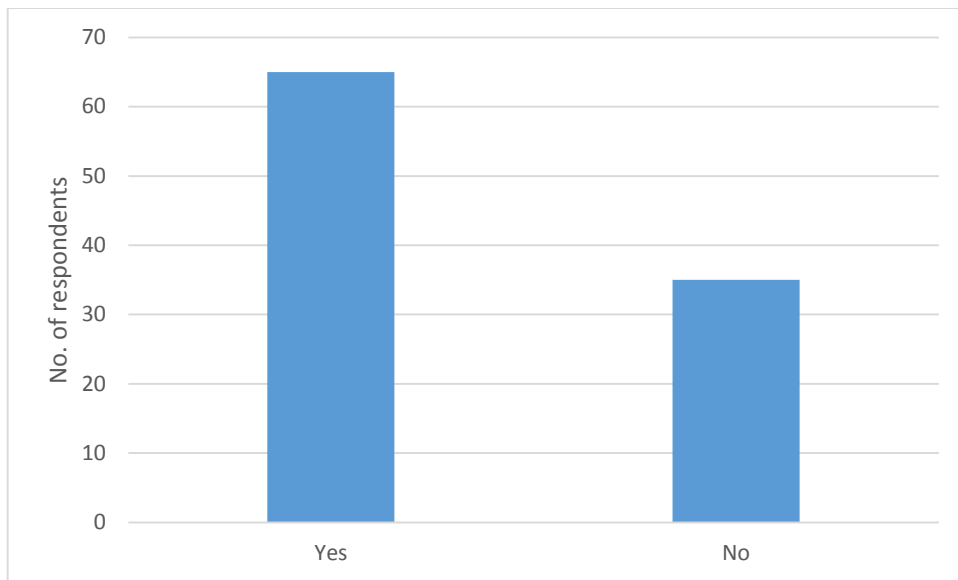


Table 8: Do you think tap water is a suitable storage media for an avulsed tooth?

Among the study population, majority (55%) of parents told that contact lens solution can be used as a preservation medium for teeth after avulsion injury whereas only 45% of parents told that contact lens solution cannot be used as a preservation medium for teeth after avulsion injury.

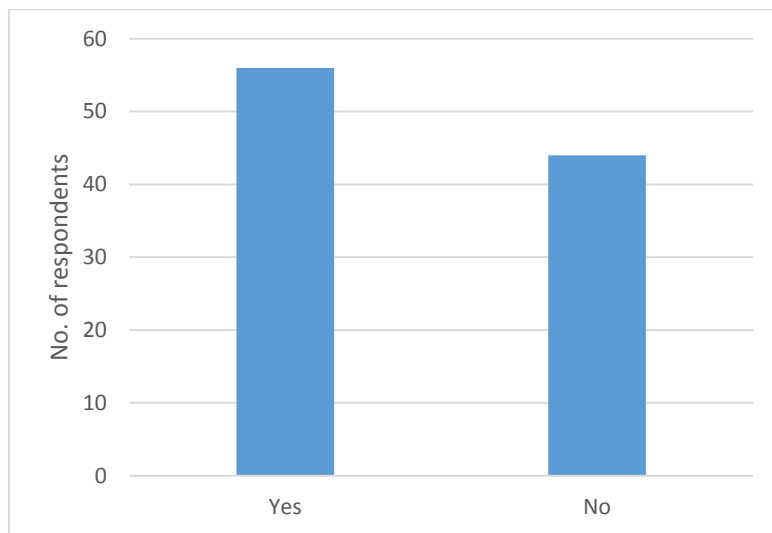


Table 9: Can contact lens solution used as a preservation medium for teeth after avulsion injury?

Among the study population, majority (45%) of parents told that storing an avulsed tooth in egg white gives better incidence of repair whereas only 55% of parents told that storing an avulsed tooth in egg white gives poor incidence of repair.

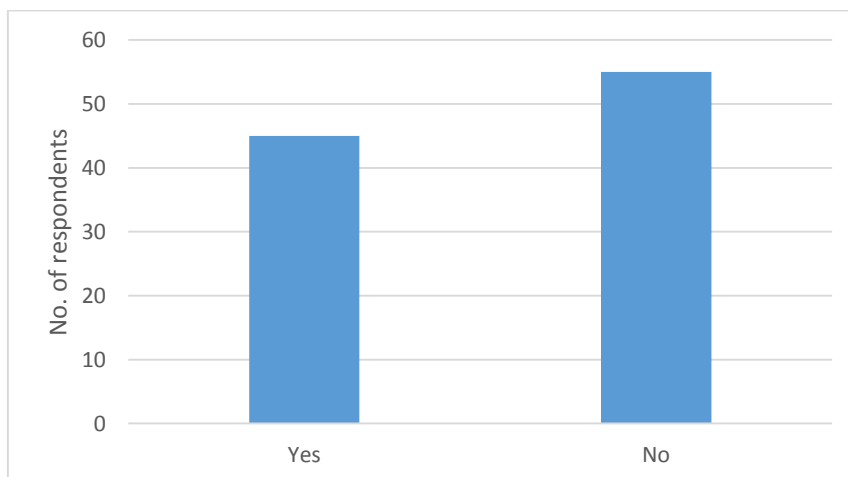


Table 10: Do you think storing an avulsed tooth in egg white gives better incidence of repair?

**DISCUSSION:**

Dental avulsion is the most severe form of dental trauma and it is characterised by complete severance of the periodontal apparatus and neurovascular bundles of the tooth leading to loss of pulp vitality. The permanent anterior teeth play an important role in good psychological development of children. It was noticed that child exhibit low self esteem and confidence because of avulsion (10,11). Many factors during the first-aid management are important and can decide future good or bad prognosis. One of the most significant points for a good avulsed tooth prognosis is the storage media. In a study conducted by Daupare S, Narbutaite J in 2018 (12) showed that the knowledge regarding the storage media for the avulsed tooth was inappropriate. 91.3% of teachers would transport a tooth in a bad storage media and only 8.7% of the participants would put an avulsed tooth in child's mouth and in a study conducted by Fux-Noy A, Sarnat H, Amir E (13) in 2011 only 16.5% of participants would transport a tooth in the milk.

In a developing country like India, where economic constraints cannot be neglected, the need for knowledge of health economics is even more important as a basis for judging health gain in curative and preventive care. The best prevention of dental and oral injuries is by educating children, teenagers, their parents, school sports authorities and coaches on how to avoid injuries and manage them.

The concept of 'dry storage' indicates that there is a lack of knowledge in children on how avulsed teeth should be handled after an accident. Dry storage of the tooth will result in an irreversible injury to the periodontal membrane, with the result that replanted tooth will be lost over time (14). Immediate reimplantation of the avulsed tooth, followed by endodontic treatment is, hence, considered as the best treatment modalities for the reasons that not only it prevents the negative psychological influences to the child, but also it prevents the incurrance of heavy economical burden on the parents which is caused by other complex treatment modalities (15,16). The prognosis of a reimplanted tooth is directly correlated to the amount of viable periodontal membrane. [35] Minimal extraalveolar dry time, adequate storage, and transport medium, along with minimal damage to the root surface and periodontal ligaments are considered by majority authors as the triad of factors which contributes to a desirable prognosis (17,18).

**CONCLUSION:**

Various awareness programs should be conducted to educate more about dental trauma, management of dental trauma in children, avulsion, and storage medium available for avulsed teeth. Intervention program should be developed targeting parents, so that unnecessary loss of permanent tooth due to avulsion injury can be avoided and the tooth be retained in function for life.

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