

## ORIGINAL RESEARCH

# The Knowledge and Attitude of School Teachers about Management of Dental Trauma

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## ABSTRACT

**Background:** Avulsion is defined as complete displacement of a tooth from its socket after trauma. The most accepted treatment for an avulsed permanent tooth is immediate replantation. Children spend a considerable amount of waking hours in school where teachers are the primary caregivers. Hence, this study was carried out to evaluate the knowledge and attitudes of school teachers about emergency management of dental trauma among Darbhanga primary and secondary school teachers.

**Methodology:** This cross-sectional study included a total of 227 teachers from different schools of Darbhanga. Questionnaire was used to collect information regarding teachers' demographics, knowledge, and attitude about dental trauma.

**Results:** Only 18% believed that knocked out permanent tooth should be replanted back into position. Surprisingly, 28% of respondents were of the opinion that avulsed tooth is useless and time should not be spent in looking for it if it gets lost after avulsion.

**Conclusion:** The present study revealed that overall knowledge regarding the emergency management of avulsed tooth was unsatisfactory in teachers. The present study entails the need of first aid training to all the teachers along with emergency management of dental trauma.

**Keywords:** Avulsion, First-aid, Management, School, Teachers.

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## INTRODUCTION

Childhood is an active phase of life when children are involved in various contact sports, indoor games, and other physical activities. Falls, sports, collisions, physical

leisure activities, being struck by an object, and traffic accidents are the major causes of traumatic dental injuries. Among them, fall is the main cause. Home and school are the most common locations where traumatic dental injuries occur.<sup>[1]</sup> This makes them vulnerable to dentofacial injuries, especially trauma to the maxillary anterior teeth.<sup>[2]</sup> Since maxillary front teeth form an essential component of a child's endearing smile, loss of these teeth can lead to low self-esteem, poor esthetics, and certain speech defects, hence affecting the psychosocial and cognitive development of a child.<sup>[3]</sup> It has been suggested that dental trauma may overtake dental caries and periodontal disease as the most significant threat to dental health among young people. Dental traumas can pose significant consequences to various health-related aspects and subsequently on children's daily life.<sup>[4]</sup> Since children do not have enough experience of dental traumas and they cannot manage these accidents by themselves, the extent and amplitude of parents' and teachers' awareness can play an essential role in preventing them.<sup>[5]</sup> Dental trauma can vary from a minor enamel chip to extensive maxillofacial damage involving the supporting structures and displacement or avulsion of teeth. It can result in functional and esthetic disturbances that are of concern for both the patients and their parents.<sup>[6]</sup> For children and adolescents, parents and teachers are usually nearby when the accidents occur. In this connection, their knowledge about the management of traumatic dental injuries is vitally important for the prognosis of injured teeth and in helping the injured person to receive appropriate first-aid treatment as soon as possible. However, many studies reveal that the teachers lack such knowledge on the management of traumatic dental injuries.<sup>[1]</sup> In Darbhanga, there have been no attempts by the government or the various dental authorities and associations to educate the school teachers on the management of dental trauma nor have there been any studies to ascertain the knowledge of them about the management of dental injuries. Hence, the aim of the present study was to evaluate the level of knowledge among school teachers in a large urban area located in Darbhanga city, Bihar.

## METHODOLOGY

A field research was conducted. Data were collected by means of a questionnaire answered by 227 full-time

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teachers working in 20 government and private schools of the city of Darbhanga. The Regional Board of Education provided data on the total number of teachers. The questionnaire comprised of nine objective questions where the first part of the questionnaire consisted in collecting demographic data and the second part consisted of questions with reference to knowledge about dental trauma and dental emergency protocols and hypothesizing situations that could occur in the school environment. To assess teachers' level of knowledge, those who correctly answered 4–6 questions were classified as having satisfactory level of knowledge, and those who correctly answered 0–3 questions as having an unsatisfactory level of knowledge. Data were tabulated and analyzed in the Statistical Package for the Social Sciences for Windows (SPSS. 15.0, 2006, SPSS, Inc., Chicago, IL, USA) software.

## RESULTS

Teachers' response rate was 89%. Career timespan ranged from 1 to 20 years, with a mean of 15.5 ± 10.5 years. The majority of teachers (72.5%) aged between 25 and 50 years and had a level of incomplete professional college education (92%). They had not had first aid training during their academic education, but the majority had witnessed accidents. The questionnaire is given in Table 1, revealing that nearly half of teachers had unsatisfactory knowledge with respect to dental trauma and emergency protocols. The number of respondents having a previous experience of knocked out tooth in their presence in school

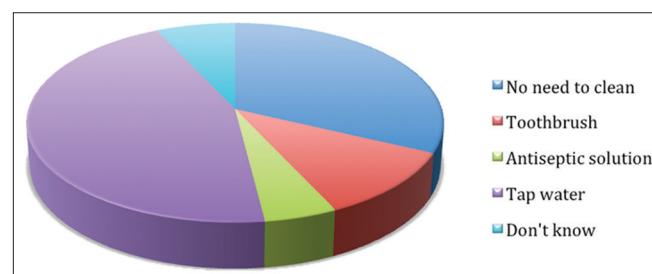
premises was 22%. 75% of the respondents were not confident to manage a case of knocked out tooth. In case of a knocked out tooth, only 15% of respondents will refer the child to a nearby dentist. Regarding the timing of treatment of knocked avulsed tooth, a vast majority of teachers (65%) felt that treatment should be carried out immediately after injury. Only 18% believed that knocked out permanent tooth should be replanted back into position. Figure 1 depicts the view of the subjects toward cleaning of the avulsed tooth. Cleaning a knocked out tooth under tap water was cited by most of the subjects (45%). Various answers were given by the respondents when asked about the storage media for avulsed tooth during transportation. Most common storage media were water, which was cited by 46% of study subjects. However, only 21% of respondents believed that tooth should be stored in child's saliva during transportation. Surprisingly, 28% of respondents were of the opinion that avulsed tooth is useless and time should not be spent in looking for it if it gets lost after avulsion. Figure 1 shows teachers knowledge regarding cleaning of the avulsed tooth.

## DISCUSSION

At least half of schoolchildren face the possibility of suffering dentoalveolar trauma during school time.<sup>[7]</sup> Dental trauma is relevant in children and adolescents since their permanent teeth are erupting at this phase.<sup>[8]</sup> In addition, at school, during sporting and recreational activities, children and adolescents are the main groups with an increased likelihood of dental trauma,<sup>[9]</sup> thereby rendering investigation of school teachers knowledge with regard to dental injuries and Table 1 presents questionnaire used in the study treatment options. The present study investigated the knowledge of 227 primary and secondary school teachers in Darbhanga district. Sports have been implicated in the etiology of trauma and a high proportion of dental trauma at school occurred during classes of physical education.<sup>[10]</sup> However, the findings of the present study revealed that respondents were not aware of sports-related

**Table 1:** Questions on knowledge of teachers

Questions on knowledge of teachers
Do you think that participating in contact sports is risky and dangerous?: Yes/No
Do you what is mouth guard?: Yes/No
Have you had any child with a knocked out tooth at your school?: Yes/No
Do you think you are adequately trained to manage a case of knocked out tooth?: Yes/No
What will you do with a child in case his tooth gets knocked out?: Don't know/call parents/call nearby hospital/refer to dentist/not to do anything/other
What should be the time of treatment in knocked out tooth?: After school time/when the child goes home within 24 h/ immediately after the injury
Do you think a knocked out baby tooth should be put back in original position?: Yes/No/Don't know
How would you clean a knocked out tooth, which has fallen to ground?: No need to clean/clean with toothbrush/with antiseptic solution/rinse with tap water/don't know
In case of knocked out tooth how will you store the tooth before treatment? Tooth is useless/child's mouth/ice/ tissue paper plastic bag/gauze piece/child's handkerchief/ milk saliva normal saline/Hank's balanced salt solution



**Figure 1:** Teachers knowledge regarding cleaning of the avulsed tooth

orofacial injuries as the majority of them thought that participating in sports is not dangerous. Use and knowledge regarding properly fitted mouth guards during sporting activities are highly recommended by many studies.<sup>[11]</sup> However, hardly any teachers were aware of mouth guards in the present study. In our study, only 15% of respondents would refer the patient with an avulsed tooth to the local dentist, which proves that efforts have to be taken by local dentist and dental associations to encourage more educational campaigns such as teachers training programs, and there can be further enhancement of the knowledge that in turn can help teachers to handle these situations in the school in better way. Immediate replantation of an avulsed tooth is of absolute necessity to achieve a propitious sequel of the replanted tooth.<sup>[12]</sup> Hence, it is necessary for either the patient or someone else at the scene to replant the tooth immediately. In the present study, only 18% of teachers agreed of replanting the tooth into the socket after avulsion. The reluctance on the part of teachers to replant the tooth could be related to lack of knowledge, fear of hurting the child, or the greater priority toward stopping the bleeding which can otherwise prove to be life threatening.<sup>[13]</sup> Knowledge of the most appropriate method to clean a dirty, knocked out tooth before replantation was investigated using a list of alternatives derived from the study reported by Hamilton *et al.*<sup>[14]</sup> In the present study, 45% of respondents would clean the tooth with tap water. Such an attitude can completely ruin the chances of a successful replantation of an avulsed tooth. The success of replantation depends on a number of factors that may contribute to accelerate or minimize the occurrence of root resorption or ankylosis, among which is the type and characteristics of the medium used for temporary storage during the time elapsed between avulsion and replantation.<sup>[15]</sup> Hank's balanced salt solution is the best storage media<sup>[16]</sup> which were cited by only 15.8% of teachers. However, its use is not practical in India because of unavailability and high cost. An ideal storage medium should fit the following criteria: Ability to preserve or replenish cell viability, adherence and clonogenic capacity, and accessibility at the site of accident.<sup>[17]</sup> Propolis is yet another storage media that have been advocated lately by researchers,<sup>[18]</sup> but it is not readily available in India. Milk has a very good capacity of maintaining the viability of periodontal ligament cells, but only 16% of respondents suggested milk as a storage media.<sup>[19]</sup> The other appropriate media are physiological saline and saliva. Alarmingly, 28% of respondents believed that the tooth is useless and time should not be wasted in looking for it. This shows a lack of knowledge among teachers regarding storage media.

## CONCLUSION

The present study revealed that overall knowledge regarding the emergency management of avulsed tooth was low in the primary and secondary school teachers of Darbhanga district. Majority of the school teachers have an unsatisfactory level of knowledge regarding the management of dental trauma. Loss of permanent tooth in a young child has psychological, functional, and esthetic consequences on the child and the parents. Replacement of avulsed tooth is costly and thus increases the economic burden on the society. The present study entails the need of first aid training to all the teachers along with emergency management of dental trauma.

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