



International Journal of Dental Sciences

www.dentaljournal.in

E-ISSN: 2663-4708, P-ISSN: 2663-4694

Received Date: 01-01-2020 Accepted Date: 02-02-2020; Published: 05-01-2020

Volume 2; Issue 1; 2020; Page No. 01-04

Knowledge about management of avulsed tooth among primary school teachers of Thodupuzha

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Abstract

Background: Traumatic injuries are common among the school children during physical activity. As teachers being the first persons to come in contact, it is essential that they know to manage such situations. Hence, the aim of this study was to evaluate the knowledge level of a group of Thodupuzha primary school teachers in the management of avulsed tooth.

Methodology: The study was conducted among 25 primary school teachers in a Al- Azhar public school, Thodupuzha. Lower primary consisted 17 teachers and remaining were Upper primary. Validated questionnaire was used for data collection.

Result: The results showed that only 32 had first aid training of dental trauma. Nearly, 36% knew about replant re-implantation of the avulsed tooth and regarding the storage media only 25% had chosen children's mouth/saliva as a suitable media.

Conclusion: This study shows a lack of knowledge regarding tooth avulsion and its emergency management among teachers in Al-Azhar public school Thodupuzha. Therefore, educational programmes are necessary to improve their level of knowledge.

Keywords: avulsed tooth, Primary, Thodupuzha, Traumatic

Introduction

Traumatic dental injuries are considered one of the most common dental injuries in children ^[1]. Dental trauma may vary from minor tooth fracture to extensive dento-alveolar damage that involves the supporting structure and tooth displacement or avulsion ^[2]. Tooth avulsion is the complete displacement of a tooth from its socket due to accident injury ^[3]. Dental avulsion comprises of 0.5%-16% of all traumatic dental injuries ^[4]. The peak age for dental traumatic injuries is between 7 and 12 years, an age group when school fills their time ^[5]. Dental trauma in boys is three times more than girls because of their active involvement in sport and game ^[6]. Moreover, maxillary central incisors are the most frequently avulsed teeth ^[4]. The treatment for avulsed teeth is the immediate dental replantation in an attempt to reinstate it to its original anatomic position, maintaining the function and integrity ^[7]. The replantation of a tooth within 15 to 20 minutes after the accident leads to lesser damage and loss of periodontal cells ^[8]. Extra-alveolar period, storage medium and contamination and protection of the periodontal ligament are important parameters for maintaining vitality of periodontal ligament which in turn determines prognosis of traumatized teeth ^[9, 10]. The time from trauma to the tooth repositioning predisposes the development of complications, directly influencing the prognosis, making it unfavourable ^[11]. As the peak age for traumatic dental injuries is between 7 to 12 years and school children are more prone for such injuries, it is essential that all children supervisors like school teachers, school nurses and other school personnel should

Be well prepared to intervene when such dental emergencies arise ^[5]. Hence, the purpose of this study was to assess the awareness and knowledge among the teachers in Al-Azhar Public School, Thodupuzha regarding tooth avulsion and its emergency management

Materials and Methods

A descriptive, questionnaire study was designed to assess the knowledge about the management of avulsed tooth among the primary schoolteachers of Thodupuzha. Prior permission was taken from the principal of Al Azhar public school and ethical approval was obtained from the Institutional Review board. The objectives of the study were explained to all the school teachers who participated in the study and also informed consent was obtained from all teachers. The questionnaire consisted of two parts. Part I comprised of questions on demographic information including age, gender, subject of teaching and teaching experience. Part II included multiple choice questions about management of avulsed teeth. The questionnaire was given to the teachers and then asked to tick the most appropriate answer from the given list of answers, in order to assess their knowledge about the management of avulsed tooth. Filled questionnaire were collected on the next day. All statistical analysis was performed using SPSS version 20 (IBM SPSS INC, USA) and $P \leq 0.05$ was considered as statistically significant. Chi square test was performed.

Result**Table 1:** Mean Age of the Study Participants

Age	Mean	Std Dev
Lower Primary	31.34	7.15
Upper Primary	32.34	6.78
Mean Age	31.84	6.96

Table 2: Gender Wise Distribution of the study participants

Gender	Lower Primary (%)	Upper Primary (%)
Male	2(50%)	2(50%)
Female	15(71%)	6(29%)
P Value	0.26	

Table 3: Response to the Questionnaire

Question	Options	Lower Primary		Upper Primary	
		No	%	No	%
You have first-aid training of the dental trauma	Yes	6	75%	2	25%
	No	11	65%	6	35%
Is the damaged front tooth likely to be a primary or permanent tooth	Primary	10	83%	2	17%
	Permanent	5	50%	5	50%
	No Answer	2	67%	1	33%
Do you have any idea that we can put the tooth into the socket again	Yes	3	33%	6	67%
	No	14	88%	2	12%
Procedure	Wash the avulsed tooth with tap water	2	67%	1	33%
	Put the avulsed tooth back into the socket immediately	1	50%	1	50%
	Take student immediately to the nearest dentist with the avulsed tooth	1	25%	3	75%
	Sideline the injured student and get him/her to bite on a tissue paper for several hours to control the bleeding	1	33%	2	67%
	No answer	12	92%	1	8%
Would you replant (put back) the tooth into the socket from which it avulsed	Yes	16	84%	3	16%
	No	2	29%	5	71%
If you decide to replant the tooth into its socket, but it has fallen onto the ground and is covered in dirt, what would you do	Rinse the tooth under running water	10	71%	4	29%
	Gently wipe off the mud that is stuck to the tooth by hand	1	100%	0	0%
	Scrub the tooth gently with a toothbrush	2	50%	2	50%
	Put the tooth straight back into the socket, with no pre-treatment	2	100%	0	0%
	No answer	2	50%	2	50%
How would you transport it to the dentist	Hold the tooth in a hand	8	89%	1	11%
	Pack the tooth in ice	2	40%	3	60%
	Seal the tooth in plastic wrap	2	67%	1	33%
	Hold the tooth in the child's mouth	1	100%	0	0%
	Wrap the tooth in dry tissue paper	2	67%	1	33%
	Store the tooth in liquid	1	50%	1	50%
	No answer	1	50%	1	50%
If liquid is used to transport the tooth, how would you transport it to the dentist	Milk	4	80%	1	20%
	Tap water	6	60%	4	40%
	Physiological saline	3	60%	2	40%
	Sports drink	2	67%	1	33%
	No answer	2	100%	0	0%

A total of 25 teachers agreed to participate in the survey. Table 1 shows mean age of study participants. The mean age of sample was 31.84. The table 2 shows gender wise distribution of study participants. In dental profession 71% were females and 50% were males in lower primary and 29% females and 50% males in the study population. For the question "You have first-aid training of the dental trauma"; 75% of the lower primary replied as "yes" and 25% replied as "No". For the question "Is the damaged front tooth likely to be a primary or permanent tooth" 83% replied as "primary" and 17% replied as secondary. Thirty (33%) of upper primary replied as "yes" and 67% replied as "No" for the question of "do you have any idea that we can put the tooth in to the socket"; Question about the storage medium was answered as milk by 80% of lower primary and 20% upper

Primary teachers whereas 60% of lower primary and 40% upper Primary saline and tap water. The transport method was 89% of lower primary was mentioned as holding the tooth in hand.

Discussion

Schools are a social environment appropriate for the development of activities that promote oral health. Such activities should include students, school assistants and even members of the community^[9]. Collaborative actions between dental and physical education professionals are needed to develop continued education programs. The development of public awareness about dental trauma depends on a clear, motivational and objective message to make lay people not only aware of their role in saving teeth in case of accidents but also to make them feel responsible

For their own health.

There is a huge deficiency of knowledge among school teachers On the management of tooth avulsion. The international association of dental traumatology in 2007 has developed a set of guidelines for the management of avulsed permanent teeth ^[9].

The results of the present study showed that teachers had inadequate information regarding tooth avulsion. The poor performance of the teachers may be justified by inadequate training, lack of information and low ability of the teachers in this issue. Therefore, it is necessary to provide emergency management programs concerning traumatic injuries, especially tooth avulsion, for teachers in Al-Azhar public school, Thodupuzha of the total 24.8% teachers who answered that a fallen tooth can be replanted, 97.3% responded that they would refer the child to the dentists for placing back the tooth in the socket rather than doing it themselves. This is similar to a survey done in USA on the elementary school staff's knowledge about dental injuries ^[17]. In a study done in University Hospital, Cardiff, 35.3% school teachers opined that a dentist should carry out the procedure of replantation ^[5]. Whereas the present study reported just 19% of teachers would recommend the same, indicates poor awareness of the school teachers which is alarming.

In a study done in Brazil, 58.3% teachers had opted cleaning the tooth with tapwater ^[2]. In the present study it is merely a 12% of the participants would recommend so.

In the present study, 32% of the school's teachers told they had knowledge about management of traumatic dental injuries which was in contrast to the study conducted by Arvind ^[19]. Which was 4.4% and comparable to the study of Abidi *et al.* ^[20]. (25.2%). In the present study, 40% of teachers selected very poor storage medium, that is, tap water comparable to Francisco (55%), ^[21]. Leila *et al.* (56.5%) ^[22]. but in contrast to the study conducted by Abidi *et al.* ^[13]. The study by Chan *et al.* ^[2]. in Hong Kong found that over 60% of teachers indicated that it was "very urgent" to seek professional assistance for cases of permanent tooth avulsions. It is required to implement public health policies that enable the reduction in prevalence of traumatic dental injuries through statute, prevention, and education. More efforts are needed to expand the knowledge related to dental trauma is the expansion and recognition of health professionals and the general public that traumatic injuries can be prevented when associated with education campaign on dental trauma in schools and the community. health professionals can contribute in this sector through information and awareness of the importance of the use of mouth guards during sports and in treating dental trauma by correctly registering the place, time, cause, and human intention. Thus, we can identify acts of violence, whose information can contribute to the responsible agencies in the development of an individual protection efficient policy. The school environment is considered a suitable place to start an education program in oral health and dental trauma prevention because more than one billion children are present in schools all over the world. In addition, these programs can humanize the school environment and implement policies and practices that offer multiple opportunities for health ^[22]. Educational campaigns to prevent accidents involving dental trauma should be instituted to minimize the damage caused by traumatic injuries ^[20].

Conclusion

These results confirm that there is a lack of knowledge among Teacher regarding tooth avulsion and its emergency management. There is a need of the education programs to address management of dental injuries for teachers. Such programs of prevention and health promotion can strengthen, throughout the school life of children, basic health concepts to improve self- esteem, life skills, and social behaviours.

Limitations

1. This research was limited to primary school teachers of a single school of Thodupuzha city. Therefore further studies involving larger sample over including more schools across the state can be carried out to facilitate generalizability of the findings
2. Social desirability to the self-administered questionnaire

Recommendations

1. This study has to be conducted at multiple sites to get a more generalizable result.
2. As a step to educate the teachers following is a list of guidelines ^[9]. that can be followed in managing cases of tooth avulsion.
3. Make sure the avulsed tooth is the child's permanent tooth, since there are different guidelines for handling avulsed primary and secondary avulsed teeth Try to keep the patient calm
4. Find the tooth and pick it up from the crown part (white part). The root should not be touched
5. If the tooth is dirty wash it for 10s with running cold water and reposition it. Encourage the teachers to replant the avulsed permanent tooth. Primary avulsed teeth are not replanted. After replanting make the patient bite onto a handkerchief to hold the tooth in position
6. If replantation is not possible to store the tooth in a storage medium such as milk, patients own saliva. The avulsed tooth can be transported in the mouth keeping it between the molars and inside the cheek keeping the root cells viable. Avoid storing the tooth in water Seek emergency dental treatment immediately.

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