

ORIGINAL ARTICLE

Dental Trauma Management; Knowledge and Attitude of School Teachers in Rural Areas of Punjab

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ABSTRACT

Objective: The purpose of study was to explore the level of knowledge and attitude in handling dental trauma among primary school teachers working in rural areas of Punjab, Pakistan.

Method: This descriptive cross-sectional study was conducted in 47 primary government schools of different rural areas of district Narowal, Punjab, Pakistan. Collected sample size was 215 primary school teachers with minimum qualification of Bachelors in Arts. Data was collected using convenient sampling technique. SPSS version 25.0 was used for analysis and further results formation. Frequencies and Percentages were calculated for gender and qualification whereas mean and standard deviation was calculated for age.

Results: Majority of participants reported that their knowledge about dealing with dental emergencies is not adequate 175(81.40%). Majority of participants were interested in having workshops on dealing with dental emergencies in school 160(74.42%).

Conclusion: The knowledge and attitude of teachers towards management of dental trauma is lacking and a dire need of awareness programs and teacher training workshops has been felt after conducting this study as management of dental trauma is an important part of student safety management.

Keywords: Dental Trauma, Teachers, Tooth Replantation, Tooth Avulsion

INTRODUCTION

Among children, dental injuries are very common. The prevalence of dental injuries among children reported in various studies is: experience of dental trauma among 50% children¹⁻⁴, whereas among children and adults, the experience of dental trauma with permanent teeth is 35%.⁵⁻⁷ Therefore, the occurrence of dental injuries in different countries is reported between 4.9-37%.^{8,9} Continuous increase in the frequency of dental injuries especially in childhood requires a complete education.^{5,10,11} Almost 16% of dental injuries deform the development of face as well as deteriorates the physical appearance.¹²

The main cause of dental traumas is falling¹³ which normally happens in school or home while playing or running. Almost half of dental traumas occurs in schools.^{10,14-18} For that reason, knowledge of teachers about dental trauma management included media for storage, and first aid instruments with proper training can play a vital role in saving the injured as well as the teeth. Numerous studies evaluated the knowledge of teachers related to first aid measure resulted in reporting 1%,¹⁵ 17.5%,¹⁶ and 71%,¹⁷ awareness but there is a scare evidence in developing countries including Pakistan. So, there is a need to explore the awareness of teachers teaching about the management of dental trauma. Therefore, the study aimed to explore the level of knowledge and attitude in handling dental trauma among primary school teachers working in rural areas of Punjab, Pakistan.

METHODOLOGY

This descriptive cross-sectional study was conducted in 47 primary government schools of different rural areas of district Narowal, Punjab, Pakistan. Collected sample size was 215 primary school teachers with minimum qualification of Bachelors in Arts. Data was collected using convenient sampling technique. A questionnaire booklet was formed containing demographic variables as age, gender, and qualification and a questionnaire containing questions of knowledge and attitude of teachers with regards to dental trauma. After taking the permission from the head master and head mistress of schools, teachers were informed about the purpose of the study and their rights of leaving the research were also briefed. Moreover, maintaining confidentiality as well as anonymity was also explained. Consent form was got signed by teachers who were willing to give data for the study. Data was, later on, entered in SPSS version 25.0 for analysis and further results formation. Frequencies and Percentages were calculated for gender and qualification whereas mean and standard deviation was calculated for age.

RESULTS

As demographic variables, gender, education and age was taken. Males teachers were 98(45.58%) and female teachers were 117(54.42%). Majority of teachers were having 14 years of education (B.A/B.Sc.) (150(69.77%)) and teachers who were having B.A/B.Sc. (Hon) (16years) as level of education were 65(30.23%). Age was categorized in three groups. Group 1 having age ranges between 21 to

30 years were 54(25.12%), group II having age ranges between 31 to 40 years were 99(46.05%) and group III having age ranges between 41 to 50 years were 62(28.84%).

Table 1: Demographic table

Gender	Frequency (%)
Male	98(45.58%)
Female	117(54.42%)
Education	
B.A/B.Sc. (14years)	150(69.77%)
B.A/B.Sc. (Hon) (16years)	65(30.23%)
Age	
21-30	54(25.12%)
31-40	99(46.05%)
41-50	62(28.84%)

Majority of participants disagreed that during school timings, are teachers not accountable for dental injuries 65(30.23%). Most of the participants 110(51.16%) were not agreed nor disagreed about the statement that management of dental injuries' knowledge can increase the

diagnosis for treatment plan. 150(69.77%) participants were neutral about the statement that if avulsed tooth will not be found, that any treatment is not required. 74(34.42%) agreed upon about the statement that in case of emergency, dental trauma management should be the part of teacher training programs. Majority of participants agreed that dental trauma is not an emergency situation 100(46.51%). The technique used by teacher to save the tooth after dental trauma during school can play a central role was reported negatively by 78(36.28%) participants. 74(34.42%) participants reported in positive that dental injuries treatment is a job of professionals which requires special training. Majority of participants were neutral about the statement that it is a legal concern that teachers help the students in case of encountered dental trauma 80(37.21%). 70(32.56%) reported in positive that if the management of dental trauma training in practical form will be given to the teachers, they will be able to do the required first aid treatment more efficiently.

Table 2: Attitude of teachers about dental trauma management

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
During school timings, are teachers not accountable for dental injuries	43(20%)	65(30.23%)	28(13.02%)	39(18.14%)	40(18.60%)
Do you think management of dental injuries' knowledge can increase the diagnosis for treatment plan	12(5.58%)	38(17.67%)	110(51.16%)	33(15.35%)	22(10.23%)
In case of missing avulsed, no treatment is required.	15(6.98%)	23(10.70%)	150(69.77%)	17(7.91%)	10(4.65%)
In case of emergency, dental trauma management should be the part of teacher training programs	16(7.44%)	18(8.37%)	49(22.79%)	74(34.42%)	58(26.98%)
Is dental not an emergency situation?	19(8.84%)	22(10.23%)	50(23.26%)	100(46.51%)	24(11.16%)
The technique used by teacher to save the tooth after dental trauma during school can play a central role	78(36.28%)	56(26.05%)	46(21.40%)	17(7.91%)	18(8.37%)
Dental injuries treatment is the job of professionals which requires special training	27(12.56%)	37(17.21%)	58(26.98%)	74(34.42%)	19(8.84%)
It is a legal concern that teachers help the students in case of encountered dental trauma.	25(11.63%)	35(16.28%)	80(37.21%)	55(25.58%)	20(9.30%)
If the management of dental trauma training in practical form will be given to the teachers, they will be able to do the required first aid treatment more efficiently.	11(5.12%)	19(8.84%)	29(13.49%)	86(40%)	70(32.56%)

Table 3: Knowledge of teachers about dental trauma management

Scenario 1: During School timings, student of 8 years got dental trauma as the upper front of his tooth was broken with no other damage.					
	Deciduous	Permanent	Do not know		
Damaged tooth is?	30(13.95%)	110(51.16%)	75(34.88%)		
	Pacifying the student and continue the class	Call Parents to take the child to the dentist	search the part of tooth and send him to dentist	Do not Know	
Best way to deal with damaged tooth	8(3.72%)	100(46.51%)	68(31.63%)	40(18.60%)	
Scenario 2: A student of 14 years fell down from stairs and got dental injury resulted in bleeding from mouth with upper teeth not properly visible.					
	Try to stop bleeding by placing handkerchief in her mouth	find the lost tooth, clean and place it in the position	while holding tooth at place immediately rushing to the dentist	taking the tooth to the dentist while covering it in envelope	Don't know
Your response will be?	93(43.26%)	18(8.37%)	75(34.88%)	19(8.83%)	10(4.65%)
	Hospital	Doctor	General Dentist	Do Not Know	
For Treatment, what will be your first choice	55(25.58%)	17(7.91%)	98(45.58%)	45(20.93%)	
	Yes	No			
Is there any need of tetanus vaccination to the student who encountered dental trauma?	51(23.72%)	164(76.28%)			
	Immediately	Within 30 minutes	within 24 hours	No time Limit	Do not know
The best time to replant the broken tooth	40(18.60%)	25(11.63%)	30(13.95%)	24(11.16%)	96(44.65%)

While answering the scenario 1, majority of participants reported that the student had permanent teeth 110(51.16%) and the best way to deal with dental trauma was to call the parents of student to take her/him to the dentist.

In case of encountered with dental injury resulted in bleeding from mouth with upper teeth not properly visible, majority of participants reported that they will try to stop bleeding by placing handkerchief in her mouth 93(43.26%). For dental treatment, the first choice of majority of participants will be general dentist 98(45.58%). Majority of participants reported that there is no need to get tetanus vaccine after dental trauma 164(76.28%). Majority of participants reported that they don't exactly know when to replant the broken tooth after dental trauma encounter 96(44.65%).

Majority of participants reported that their knowledge about dealing with dental emergencies is not adequate 175(81.40%). Majority of participants were interested in having workshops on dealing with dental emergencies in school 160(74.42%). Majority of participants reported that they will get panic in dealing with dental injuries in school 147(68.37%).

Table 4: Assessment of Teachers about dental trauma

	Yes	No
Is your knowledge about dealing with dental emergencies is adequate?	40(18.60%)	175(81.40%)
Are you interested in having workshops on dealing with dental emergencies in school	160(74.42%)	55(25.58%)
Do you think you will not get panic in dealing with dental injuries in school?	68(31.63%)	147(68.37%)

DISCUSSION

Management of dental trauma requires instant as well as needful actions to reduce the further complications. The extremely severe dental trauma is the avulsion of permanent tooth as per International Association of Traumatology. It was reported that the best way to treat such trauma is to immediately replant the tooth. In case of any impossibility, the avulsed tooth should be protected in an appropriate fluid such as milk. On the other hand, replanting of deciduous teeth is not recommended.²

The findings of current study uncovered that about 30.23% of the teachers reported that not responsible for the dental trauma is schools which is in line with the findings of another study in which 39.1% participants reported the same.¹⁹ The properly implemented first aid technique can help in better treatment was reported by majority of participants by a similar study (49.5%)¹⁹ where teachers of rural areas in Punjab responded higher as neutral 110(51.16%) which seems like there is a need to have awareness programs. Moreover, 61.4% participants replied positively to have dental trauma management trainings as mandatory stuff which is near to the findings of a similar study 70% participants.¹⁹

The findings of current study revealed that only 8.37% stated that in case of dental fracture, tooth should be replant which is quite low percentage as compared to the reported 38% in another study.¹⁹ This indicates the need of teachers' training with regards to dental trauma management. Around 32% teachers reported of

replantation of avulsed tooth.²⁰ A study revealed 33.8% teachers²⁰ reported the correct replantation time whereas the results of current study reported only 18.60 participants reported it. Current study revealed that 81.40% thought that their knowledge of dealing with dental trauma is not adequate which is not equal to the results reported by a similar study (94%).¹⁹

In conclusion, the knowledge and attitude of teachers towards management of dental trauma is lacking and a dire need of awareness programs and teacher training workshops has been felt after conducting this study as management of dental trauma is an important part of student safety management.

REFERENCES

- Andreasen JO, Andreasen FM. Textbook and Color Atlas of Traumatic Injuries to the Teeth. 4th ed. Oxford: Blackwell Publishing; 2007. p. 444-480.
- Ingle NA, Baratam N, Charania Z. Prevalence and factors associated with traumatic dental injuries (TDI) to anterior teeth of 11-13 year old school going children of Maduravoyal, Chennai. J Oral Health Comm Dent. 2010; 4: 55-60.
- Pine CM, Harris R. Community oral health. 2nd ed. Quintessence Book Publishing Co.: UK; 1997. p. 203-211.
- McDonald RE, Avery DR. Dentistry for the child and adolescent. 8th ed. Mosby Co.: St Louis; 2009. p. 370-470.
- Traebert J, Peres MA, Blank V, Böell Rda S, Pietruza JA. Prevalence of traumatic dental injury and associated factors among 12-year-old school children in Florianópolis, Brazil. Dent Traumatol. 2003; 19: 15-18.
- Rajab LD. Traumatic dental injuries in children presenting for treatment at the Department of Pediatric Dentistry, Faculty of Dentistry, University of Jordan, 1997-2000. Dent Traumatol. 2003; 19: 6-11.
- Eyuboglu O, Yilmaz Y, Zehir C, Sahin H. A 6-year investigation into types of dental trauma treated in a paediatric dentistry clinic in Eastern Anatolia region, Turkey. Dent Traumatol. 2009; 25: 110-114.
- Traebert J, Peres MA, Blank V, Böell Rda S, Pietruza JA. Prevalence of traumatic dental injury and associated factors among 12-year-old school children in Florianópolis, Brazil. Dent Traumatol. 2003; 19: 15-8.
- Marcenes W, al Beirut N, Tayfour D, Issa S. Epidemiology of traumatic injuries to the permanent incisors of 9-12-year-old schoolchildren in Damascus, Syria. Endod Dent Traumatol. 1999; 15: 117-123.
- Marcenes W, Murray S. Changes in prevalence and treatment need for traumatic dental injuries among 14-year-old children in Newham, London: a deprived area. Community Dent Health. 2002; 19: 104-108.
- Gift HC, Bhat M. Dental Visits for Orofacial Injury: Defining the Dentist's Role. The Journal of the American Dental Association. 1993; 124: 92-96.
- Wilson S, Smith GA, Preisch J, Casamassimo PS. Epidemiology of dental trauma treated in an urban pediatric emergency department. Pediatr Emerg Care. 1997; 13: 12-15.
- Ozen B, Cakmak T, Altun C, Bagis B, Senel FC, Baltacioglu E, Koskan O. Prevalence of dental trauma among children age 2-15 years in the Eastern Black Sea Region of Turkey. J Int Dent Med Res. 2010; 3: 126-132.
- Mohandas U, Chandan GD. Knowledge, attitude and practice in emergency management of dental injury among physical education teachers: a survey in Bangalore urban schools. J Indian Soc Pedod Prev Dent. 2009; 27: 242-248.

15. McIntyre JD, Lee JY, Trope M, Vann WF Jr. Permanent tooth replantation following avulsion: using a decisiontree to achieve the best outcome. *Pediatr Dent.* 2009; 31: 137-144.
16. Chan AW, Wong TK, Cheung GS. Lay knowledge of physical education teachers about the emergency management of dental trauma in Hong Kong. *Dent Traumatol.* 2001; 17: 77-85.
17. Sae-Lim V, Lim LP. Dental trauma management awareness of Singapore pre-schoolteachers. *Dent Traumatol.* 2001; 17: 71-76.
18. Mesgarzadeh AH, Shahamfar M, Hefzollesan A. Evaluating knowledge and attitudes of elementary school teachers on emergency management of traumatic dental injuries: a study in an Iranian urban area. *Oral Health Prev Dent.* 2009; 7: 297-308.
19. Attarzadeh H., Kebriaei F., Sadri L., Foroughi E., Taghian M. Knowledge and Attitudes of Elementary Schoolteachers on Dental Trauma and its Management in Yazd, Iran. *J Dent Shiraz Univ Med Sci.*, 2017 September; 18(3): 212-218
20. Raoof M, Zaherara F, Shokouhinejad N, Mohammadalizadeh S. Elementary school staff knowledge and attitude with regard to first-aid management of dental trauma in Iran: a basic premise for developing future intervention. *Dent Traumatol.* 2012; 28: 441-447.