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Emergency Management Of Dental Injury; Preparedness Among School Teachers In Swabi Khyber Pakhtunkhwa - A Cross-Sectional Study

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Abstract

Objective: Dental trauma poses a significant threat to the oral health and well-being of school-aged children worldwide. Prompt and appropriate management of dental trauma is crucial to prevent infection, abscess formation, and pulp necrosis.

Methods: The descriptive cross-sectional study was carried out among 320 male and female teachers via cluster random sampling from October 2023 to May 2024 to assess the level of knowledge among school teachers regarding emergency management of dental injuries, to evaluate the preparedness of school teachers in handling dental injuries in the school setting and to determine the association between demographics with knowledge and preparedness regarding emergency management of dental injuries. Data was collected about socio-demographic characteristics and emergency preparedness for dental trauma.

Results: Out of 320 individuals, the level of the teachers' knowledge was moderate (53.3%). Only a few teachers were found to have undergone first-aid training in TDI (19.4%) and to have encountered TDI incidents (21.9%) before. 93(50.5%) females correctly identified fracture (p-value 0.014). A significant association was observed for identifying fractured teeth and managing avulsed teeth with first aid training with a p-value of 0.017 and 0.008 respectively. A significant association was observed between the age group 41-50 years and the Importance of seeking emergency management for dental trauma (p-value 0.018) and knowledge status (p-value 0.007).52.3% of teachers correctly identified a solution for washing a re-implanted tooth (p-value 0.000**).**46% of teachers whose service span was more than 19 years, had better self-rated knowledge (p-value 0.002)

Conclusion: A moderate number of teachers had adequate knowledge among school teachers regarding dental trauma management. While a substantial proportion of teachers exhibit a commendable understanding and readiness to address dental emergencies, there remains a notable gap between certain aspects of knowledge and preparedness.

Keywords: Emergency management, Preparedness, School teachers.

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1. Introduction

An abrupt transfer of kinetic energy to the teeth, soft tissues, and supporting structures causes traumatic dental injury (TDI), resulting in displacements, fractures, and damage to the gingival tissues and alveolar bone. These injuries are common in dentistry, making up around 5% of all traumatic cases in first-aid circumstances.[1] WHO reports that 16% to 40% of kids between the ages of 6 and 12 suffer from mild to severe tooth damage.[2]

TDIs range from 11% to 47% in the primary dentition and from 5% to 29% in the permanent dentition.[3] A child spends approximately 40% of their waking hours at school. Schools are spots where one might encounter an elevated risk of TDIs after home, as children between the ages of 8 and 11 are prone to trauma. Teachers are typically present when dental trauma happens during school hours, as sports and school injuries constitute 60% of all TDIs.[4] The prognosis for teeth that have been traumatized depends on timely intervention and suitable care, which frequently rely on the expertise of individuals like the child's caregivers (parents and teachers.[5] Children diagnosed with TDI psychologically frequently struggle with anxiety, which negatively impacts their personality and overall well-being. Clinically, dental trauma can result in fistulas, periapical inflammation, soft tissue necrosis, tooth fractures, and/or bone and/or fractures.[6]

Avulsed permanent teeth can be treated with Replantation; however, the success of the procedure depends on timely and adequate action at the scene of the event.[7] Other elements include the patient's overall health, the root apex's immaturity, a brief extraoral period, and the appropriate transport medium.[8] When first aid is administered, the tooth in the alveolar socket is replaced, and the patient is referred right away to the dental clinic.[9] Since many teachers have seen traumatic dental injury (TDI), there is a high risk

of dental traumas at school.[2,10] As a result, they must be able to handle children's oral injuries appropriately.[11] Studies, however, show that teachers lack sufficient understanding of the conduct in dental trauma emergencies.[12]

This study aims to identify gaps and suggest improvement strategies by examining knowledge and preparedness regarding dental emergency management. Early intervention can affect long-term results such as preservation of teeth and aesthetics. The fact that accidents are inevitable despite safety measures emphasizes the importance of preparation for school personnel. Although many studies have investigated teachers' first-aid knowledge and skills, few have focused on dental emergencies. This finding of difference highlights the need for a comprehensive evaluation of teachers' abilities to respond to dental emergencies.

2. Materials & Methods

A Descriptive study Cross-sectional study was conducted on Schools public sector schools from district Swabi/Tehsil Swabi from October 2023 to May 2024 by Cluster random sampling. Among 4 tehsils of District Swabi, Tehsil Swabi was randomly selected. A total of 34 schools in Tehsil Swabi were sampled including 19 boys and 15 girls schools. Both male and female teachers consenting to participate were included in the study. The sample size of 320 was calculated using the WHO sample calculator by parameters of School teachers population 1897, the confidence level of 95% and absolute precision of 5%, Prevalence of 50%.

Data was collected via a questionnaire used in previous studies,[13]comprised of three sections:

Section I: incorporated five questions to gather information related to teachers' demographic and work-related characteristics

Section II: Five multiple-choice questions were employed to evaluate TDI's emergency management knowledge.

Section III: consisted of five questions designed to evaluate teachers' readiness for managing dental trauma in an emergency.

The data was analyzed using SPSS software version 20. Frequencies and percentages were calculated for categorical variables. All responses were coded as correct and incorrect. The chi-square test was used to assess the association between demographic variables and knowledge and preparedness for dental trauma. P-values less than 0.05 were considered statistically significant.

This study was approved by the Institutional Review Board of the Armed Force Post Graduate Medical Institute Ref No 393-AAA-ERC-AFPGMI. Consent from participants was obtained by ticking a checkbox of agreement as part of the participant information section that formed the first page of the survey. All responses to the survey were anonymous and only those directly involved in the research had access to the data collected.

3. Results

Total of 320 individuals were included in the study, 177(55.3%) were male,115(35.9%) greater than 50 years of age,221(59.1%) had post-graduate qualifications,128(40%) had service span of greater than 19 years,258(80.60%) had not attended any first aid training program and 250(78.1%) never witnessed any dental accident. Detailed description of the sociodemographic profile training-related characteristics is given in Table 1.

Table 1: Sociodemographic and training-related characteristics of respondents

Variable	Frequency	Percentage
Gender		
Male	143	44.7
Female	177	55.3
Age		
Less than 30 years	35	10.9
31-40 years	102	31.9
41-50 years	115	35.9
Greater than 50 years	68	21.3
Education level		
Graduate	99	30.9
Postgraduate	221	69.1
Service period(years)		
Less than 6	70	21.9
6-19	128	40.0
Greater than 19	122	38.1
First aid training attended		
No	258	80.6
Yes	62	19.4
Witnessed dental accident		
No	250	78.1
Yes	70	21.9

Table 2 presents the responses to a question regarding knowledge of dental trauma. Scenario 1 was a 9-year-old child who sustained a facial injury from a ball impact, resulting in fractures to two anterior teeth.184

(57.5%) correctly identified that the attached teeth are permanent. The right course of action was selected by 219 (68.4%) who advised the youngster to hold the broken tooth gently in their mouth and to be taken right away to the closest dentist. 286(89.4%) of the sample, acknowledged the significance of seeking professional help. 171(53.4%), indicated that they believe their knowledge of emergency management is satisfactory.

Table 2: Knowledge regarding the Identification of dentition and its management

	Frequency	Percent
Status of attached teeth following facial impact in a 9-year-old child		
Don't know	69	21.6
Milk teeth	67	20.9
Permanent teeth*	184	57.5
Adequate actions considered		
You will look for the parts of the broken tooth and contact his parents after class to explain what happened.	16	5.0
After locating the fractured tooth's parts, you will give the child a cold beverage and get in touch with their parents	85	26.6
You would ask the child to gently place the tooth in his mouth, and then you would take him right away to the closest dentist*	219	68.4
Importance of seeking emergency management for dental trauma		
No	34	10.6
Yes*	286	89.4
Assessment of satisfactory knowledge in emergency management		
No	149	46.6
Yes	171	53.4
Interest in receiving short training on managing dental trauma cases		
No	69	21.6
Yes	251	78.4

Responses to a scenario involving a 12-year-old child who falls down stairs and loses one of their top front teeth. 138 (43.1%) teachers would look for the tooth and put it back into the socket. For a scenario involving the re-implantation of a tooth that has fallen on the floor, 178(55.6%), selected rinse the tooth under tap water. For transportation of a tooth to the dentist, 209(65.3%) transport the tooth using paper tissue. 208(65.0%) of the sample, emphasized the importance of seeking professional help immediately after a permanent tooth is knocked out. Detailed responses are mentioned in Table 3.

Table 3: Preparedness of dental trauma and its management

Immediate response to a 12-year-old child's dental injury at school	Frequency	Percent
To stop the bleeding, you would instruct the child to bite on a piece of tissue paper.	125	39.1
Finding the tooth and replacing it in its socket*.	138	43.1
You would ask the child to gently place the tooth in his mouth, and then you would take him right away to the closest dentist.	6	1.9
Procedure for re-implantation of a tooth fallen on the floor		
You would locate the tooth and clean it with any kind of liquid.	51	15.9
The tooth would be replaced into its socket without any prior care.	62	19.4
Use tap water to rinse the tooth. *.	178	55.6
Using a toothbrush, you would gently clean the tooth.	80	25.0
Choice of solution for washing a re-implanted tooth		
Antiseptic solution	155	48.4
Filtered water	18	5.6
Saline solution	59	18.4
Tap water*	88	27.5
Transportation a dislodged tooth to the dentist for re-implantation		
Tap water	30	9.4
Filtered water	41	12.8
Milk*	17	5.3
Paper tissue	209	65.3
Child's mouth *	23	7.2
Recommended urgency for seeking professional help after a permanent tooth is knocked out		
Before next day	16	5.0
Don't know	45	14.1
Immediately	208	65.0
Within 30 min*	22	6.9
Within a few hours	29	9.1
Total	**320**	**100.0**

For gender, a Significance association was observed for correctly identified teeth (p-value 0.014). For appropriate action after a fallen tooth,(p-value 0.002).Satisfactory knowledge in emergency management(p-value 0.000) and receiving short training on dental trauma management,(p-value 0.002), the preferred solution for re-implantation (p-value 0.000) and procedure for re-implantation of a tooth fallen on the floor(p-value 0.032). For association regarding knowledge of dental trauma and service span, a significant association was observed for the Importance of seeking emergency management for dental trauma (p-value 0.050) and, the presence of satisfactory knowledge in emergency management (p-value 0.002).

Table 4: Association between gender, service span, and knowledge and Preparedness for dental trauma

Knowledge Related Questions	Gender		Chi, P-Value	Service Span			Chi, P-Value
Status Of Attached Teeth Following Facial Impact In A 9-Year-Old Child	**Males N (%)**	**Females N (%)**		**<6 Years**	**7-19 Years**	**>19 Years**	
Correct Answer	91(49.5%)	93(50.5%)	6.006, 0.014	43(23.4%)	70(38%)	71(38.6%)	0.88, 0.644
Incorrect Answer	86(63.2%)	50(36.7%)		27(19.9%)	58(42.6%)	51(37.5%)	
Adequate Actions Considered							
Correct Answer	134(61.2%)	85(38.8%)	9.688, 0.002	53(24.2%)	87(39.7%)	79(36.1%)	2.49, 0.287
Incorrect Answer	43(42.6%)	58(57.4%)		17(16.8%)	41(40.6%)	43(42.6%)	
Importance Of Seeking Emergency Management For Dental Trauma							
Correct Answer	160(55.7%)	127(44.3%)	0.215, 0.643	68(23.7%)	114(39.7%)	105(36.6%)	5.991, 0.050
Incorrect Answer	17(51.5%)	16(48.5%)		2(6.1%)	14(42.4%)	17(51.5%)	
Assessment Of Satisfactory Knowledge In Emergency Management							
No	66(44.3%)	83(55.7%)	13.692, 0.000	40(26.8%)	67(45%)	42(28.2%)	12.09, 0.002
Yes	111(64.9%)	60(35.1%)		30(17.5%)	61(35.7%)	80(46.8%)	
Interest In Receiving Short Training On Managing Dental Trauma Cases							
No	27(39.1%)	42(60.9%)	9.319, 0.002	13(18.8%)	29(42%)	27(39.1%)	0.484, 0.785
Yes	150(59.8%)	101(40.2%)		57(22.7%)	99(39.4%)	95(37.8%)	
Preparedness Of Dental Trauma							
Immediate Response To A 12-Year-Old Child's Dental Injury At School							
Correct Answer	95(52.2.%)	87(47.8%)	1.656, 0.198	38(27.5%)	53(38.4%)	47(34.1%)	4.672, 0.092
Incorrect Answer	82(59.4%)	56(40.6%)		31(17.6%)	75(41.2%)	75(41.2%)	
Procedure For Re-Implantation Of A Tooth Fallen On The Floor							
Correct Answer	89(50%)	89(50%)	4.58, 0.032	40(22.5%)	70(39.3%)	68(38.2%)	0.112, 0.946
Incorrect Answer	88(62%)	54(38%)		30(21.1%)	58(40.8%)	54(38%)	
Choice Of Solution For Washing A Re-Implanted Tooth							
Correct Answer	27(30.7%)	61(69.3%)	29.79, 0.000	26(29.5%)	38(43.2%)	24(27.3%)	7.321, 0.026
Incorrect Answer	150(64.7%)	82(35.3%)		44(19%)	90(38.8%)	98(42.3%)	
Transportation A Dislodged Tooth To The Dentist For Re-Implantation							
Correct Answer	23(48.9%)	24(51.1%)	0.906, 0.341	14(29.8%)	16(34%)	17(36.2%)	2.12, 0.346
Incorrect Answer	154(56.4%)	119(43.6%)		56(20.5%)	112(41%)	105(38.5%)	
Recommended Urgency For Seeking Professional Help After A Permanent Tooth Is Knocked Out							
Correct Answer	14(63.6%)	8(36.5%)	0.662, 0.416	8(27.3%)	6(27.3%)	10(45.5%)	1.604, 0.448
Incorrect Answer	163(54.7%)	135(45.3%)		64(21.5%)	122(40.9%)	112(37.6%)	

The choice of solution for washing a re-implanted tooth (p-value 0.026) is shown in Table 4. For preparedness for dental trauma, a significant association was observed for the choice of solution for washing a re-implanted tooth showed a significant association (p-value 0.000), the Importance of seeking emergency management for dental trauma (p-value 0.018) and, the presence of satisfactory knowledge in emergency management (p-value 0.007). Details are shown in Table 5

Table 5: Association between education, age and knowledge and Preparedness for dental trauma

Knowledge Related Questions	Education		Chi, P-Value	Age				Chi, P-Value
Status Of Attached Teeth Following Facial Impact In A 9-Year-Old Child	**Graduate N (%)**	**Post-Graduate N (%)**		**<30 Years**	**31-40 Years**	**41-50 Years**	**>50 Years**	
Correct Answer	53(28.8%)	131(70.2%)	0.922	18(9.8%)	61(33.2%)	65(35.3%)	40(21.7%)	0.84,
Incorrect Answer	46(33.8%)	90(66.2%)	,0.33	17(12.5%)	41(30.1%)	50(36.8%)	28(20.6%)	0.839
Adequate Actions Considered								
Correct Answer	65(29.7%)	154(70.3%)	0.513,	26(11.9%)	73(33.3%)	75(34.2%)	45(20.5%)	1.73,
Incorrect Answer	34(33.7%)	67(66.3%)	0.474	9(8.9%)	29(28.7%)	40(39.6%)	23(22.8%)	0.630
Importance Of Seeking Emergency Management For Dental Trauma								
Correct Answer	91(31.7%)	196(68.3%)	0.772,	34(11.8%)	96(33.4%)	102(35.5%)	55(19.2%)	10.09
Incorrect Answer	8(24.2%)	25(75.8%)	0.380	1(3%)	6(18.3%)	13(39.4%)	13(39.4%)	0.018
Assessment Of Satisfactory Knowledge In Emergency Management								
No	50(33.6%)	99(66.4%)	0.895,	20(13.4%)	59(39.6%)	42(28.2%)	28(18.8%)	12.24
Yes	49(28.7%)	122(71.3%)	0.344	15(18.8%)	43(25%)	73(42.7%)	40(23.4%)	0.007
Interest In Receiving Short Training On Managing Dental Trauma Cases								
No	23(33.3%)	46(66.7%)	0.236	9(13%)	21(30.4%)	23(33.3.%)	16(23.2%)	0.736
Yes	76(30.3%)	175(69.7%)	0.627	26(10.4%)	81(32.3%)	92(36.7%)	68(21.3%)	0.865
Preparedness Of Dental Trauma								
Immediate Response To A 12-Year-Old Child's Dental Injury At School								
Correct Answer	42(30.4%)	96(69.6%)	0.029,	17(12.3%)	49(35.5.%)	43(31.2%)	29(21%)	2.975
Incorrect Answer	57(31.3%)	125(68.7%)	0.865	18(9.9%)	53(29.1%)	72(39.6%)	39(21.4%)	0.395
Procedure For Re-Implantation Of A Tooth Fallen On The Floor								
Correct Answer	53(29.8%)	125(70.2%)	0.254	18(10%)	61(34.3%)	63(35.4%)	36(20.2%)	1.203
Incorrect Answer	46(32.4%)	96(67.6%)	0.615	17(12%)	41(28.9%)	52(36.6%)	32(22.5%)	0.752
Choice Of Solution For Washing A Re-Implanted Tooth								
Correct Answer	42(47.7%)	46(52.3%)	16.01,	13(14.8%)	35(39.8%)	31(35.2%)	9(10.2%)	10.96
Incorrect Answer	57(24.6%)	175(75.4%)	0.000	22(9.5%)	67(28.9%)	84(36.2%)	59(25.4%)	0.012
Transportation A Dislodged Tooth To The Dentist For Re-Implantation								
Correct Answer	11(23.4%)	36(76.6%)	1.463	7(14.9%)	19(40.4%)	13(27.7%)	8(17%)	3.566
Incorrect Answer	88(32.2%)	185(67.8%)	0.226	28(10.3%)	83(30.4%)	102(37.4%)	60(22%)	0.312
Recommended Urgency For Seeking Professional Help After A Permanent Tooth Is Knocked Out								
Correct Answer	7(31.8%)	15(68.2%)	0.009	3(13.6%)	7(31.8%)	4(18.2%)	8(36.4%)	4.76
Incorrect Answer	92(30.9%)	206(69.1%)	,0.92 6	32(10.7%)	95(31.9%)	111(37.2%)	60(20.1%)	0.189

4. Discussion

Given that dental emergencies are common in schools and affect a large number of children, it is critical to evaluate the knowledge, attitudes, and readiness of teachers to handle these situations.[14]

In the current study, only 19% of participants acquired knowledge of dental trauma through training, similar results were seen in the study conducted in Croatia, 22.22%.[15] Barely 2.2% of Turkish teachers had received dental trauma first aid.[16] However, Indian research demonstrated that 68% of teachers acquired first aid training while undergoing their teacher training.[17] This

percentage is quite low in the current study even though as many as 69% of the total participants had completed their post-graduate degree. This suggests that dental trauma management is not a regular part of the curriculum for teacher training

Seventy-eight per cent of the participants had never seen oral trauma, thus rendering them unable to provide first aid, another study reported similar results i.e., 68.52%,[15] 87.6%,[18]

In case 1 for knowledge-related questions,148 teachers, or 57.5%, confirmed that the 8-year-old girl's permanent dentition included a damaged incisor. This suggests that the teachers' general dental knowledge was sufficient; earlier research had found that the teachers' knowledge of identifying teeth was insufficient.[19,20]

Regarding the management of the situation of fractured teeth, 68% of the teachers will take their child to the dentist, contradictory results were observed in a study where only 33.9% of teachers would send children to the dentist.[20] Another study showed the majority of the teachers gave warm drinks and immediately contacted their parents.[21]

About 89% of the participants considered the urgency of dental trauma management (DTM), similar results were observed in the study of Turkey where 71.9% of teachers believe dental trauma requires immediate management, results were better in the current study as compared to other studies in the which participants didn't consider the urgency of situation i.e,59%.[22]

In the current study, self-perceived knowledge of dental emergencies was adequate for 53.4% of teachers, contrasting results were seen in the study in which only 15% of teachers had adequate knowledge.[23]

For gender difference 55.3% of females had better knowledge with significant association, similar results were seen in studies conducted in Brazil (60.4%).[24] This may be attributed to women's nurturing traits and close associations with children.

Data about age-based responses indicate that individuals older than thirty gave more correct responses overall. This might be due to the reason that with age often comes increased maturity and a sense of responsibility, leading older teachers to be more proactive in learning about and managing health-related issues in their students, contrasting results were seen in the study where young teachers had a better proportion of correct responses.[22] 78.4% of teachers answered they would like more information to handle these situations; prior research had 100% responses,[24]

Part II of the questionnaire includes questions related to preparedness for dental trauma.

Soft tissue injuries and bleeding often accompany tooth avulsion, creating a dramatic situation for many individuals. On the other hand, if the avulsed permanent tooth is replanted within thirty minutes and the periodontal ligament on the root surface is kept wet and intact, the prognosis is best. It is not advised to replant a deciduous tooth that has become avulsed.[25]

Approximately 27% of instructors correctly identified the need to quickly wash the root with saline or tap water, despite the small percentage of teachers claiming training in dental emergencies. On the other hand, 67% of respondents in a different survey provided accurate answers.[26]

Storing the avulsed tooth in appropriate media and taking the patient and the tooth to a dentist for replantation is an alternative to replantation. Milk is widely available and is an excellent transport medium. According to a different survey, just 4.7% of participants knew how to properly store a tooth or a broken piece of it; in the current study, only 15.5% would do so.[15] Another study showed a majority of responses for an antiseptic solution i.e.,72.6%.[24] As many as 65% of the participants chose to place teeth back immediately and 5% chose a window of 30 minutes, another study showed as many as 48% of the participants did not know what should be the minimum duration for which the tooth can be safely kept out of the socket and only 25% participants chose to place it back immediately.

5. Conclusion

A moderate number of teachers had adequate knowledge among school teachers regarding dental trauma management. There remains a notable gap between certain aspects of knowledge and preparedness. This gap can be reduced by conducting educational programs in this regard to increase the level of knowledge of school teachers in the field of dental trauma.

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A.K[1], AK[2], F.P, M.R, S.S, S.I.M - Conception of study
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A.K[1], AK[2], F.P, M.R, S.S, S.I.M - Analysis/Interpretation/Discussion
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References

1. Yeng T, O'Sullivan AJ, Shulruf B. Medical doctors' knowledge of dental trauma management: A review. Dental Traumatology. 2019 Nov 7;36(2):100–7. https://doi.org/10.1111/edt.12518.
2. Daupare S, Julija Narbutaitė. Primary school teachers' knowledge and attitude regarding traumatic dental injuries. PubMed. 2020 Oct 3;38(3):216–21. https://doi.org/10.4103/jisppd.jisppd_170_18.
3. Lembacher S, Schneider S, Lettner S, Bekes K. Prevalence and patterns of traumatic dental injuries in primary teeth: a 3-year retrospective overview study in Vienna. Clinical Oral Investigations. 2021 Nov 6. https://doi.org/10.1007/s00784-021-04190-2.
4. Supraja K, Poorni S, Suryalakshmi V, Duraivel D, Srinivasan M. Knowledge, attitude, and practice of Chennai school teachers on traumatic dental injuries management – A cross-sectional study. Journal of Conservative Dentistry. 2021;24(4):364. https://doi.org/10.4103/jcd.jcd_443_20.
5. Al-Khalifa K, AlYousef Y. Awareness of dental trauma management among school teachers in Dammam, Saudi Arabia. Saudi Journal of Medicine and Medical Sciences. 2022;10(1):49. https://doi.org/10.4103/sjmms.sjmms_306_20.
6. Kvesić AJ, Hrelja M, Lovrić Ž, Šimunović L, Špiljak B, Supina N, et al. Possible Risk Factors for Dental Fear and Anxiety in Children Who Suffered Traumatic Dental Injury. Dentistry Journal [Internet]. 2023 Aug 1;11(8):190. Available from: https://www.mdpi.com/2304-6767/11/8/190. https://doi.org/10.3390/dj11080190.
7. Fouad AF, Abbott PV, Tsilingaridis G, Cohenca N, Lauridsen E, Bourguignon C, et al. International Association of Dental Traumatology guidelines for the management of traumatic dental injuries: 2. Avulsion of permanent teeth. Dental Traumatology. 2020 Jun 13;36(4).https://doi.org/10.1111/edt.12573.
8. Kadulkar N, Kataki R, Deka A, Thonai S, Kadulkar N, Kataki R, et al. Replantation of an Avulsed Tooth: A Case Report. Cureus [Internet]. 2023 May 18;15(5). Available from: https://www.cureus.com/articles/154844-replantation-of-an-avulsed-tooth-a-case-report. https://doi.org/10.7759/cureus.39198
9. O Eigbobo J. An Assessment of Emergency Care Following Tooth Avulsion Among A Selected Population of Nigerian School Children. Interventions in Pediatric Dentistry Open Access Journal. 2020 Feb 20;3(5). https://doi.org/10.32474/ipdoaj.2020.03.000174.
10. Fernanda Bello KNEITZ, Almeida F, Cláudia L, CAMPOS S, Camila Faria CARRADA, Fernanda Campos MACHADO. Elementary school teachers' knowledge and attitudes toward emergency management of traumatic dental injuries. Brazilian Oral Research. 2023 Jan 1;37. https://doi.org/10.1590/1807-3107bor-2023.vol37.0073.
11. Charan VSS, Mathew MG, Gurunathan DD. Knowledge, Attitude and Practice of School Teachers toward Oral Health of Children in Chennai. Annals of the Romanian Society for Cell Biology [Internet]. 2021 Mar 24 [cited 2024 Jul 15];25(3):2630–43. Available from: http://annalsofrscb.ro/index.php/journal/article/view/1732
12. Tewari N, Goel S, Rahul M, Mathur VP, Ritwik P, Haldar P, et al. Global status of knowledge for prevention and emergency management of traumatic dental injuries among school teachers: A systematic review and meta-analysis. Dental Traumatology. 2020 Jul 2;36(6):568–83. https://doi.org/10.1111/edt.12579.
13. Mohan R, Dhamodhar D. Preparedness Among Teachers In Handling Emergency Dental Needs Among Children -A Comparative Study Between Government And Private School Teachers In Assam. Journal of Survey in Fisheries Sciences. 2023;10(4S):341–51.
14. Kaul R, Jain P, Saha N, Goswami S, Mukhopadhyay S, Saha S, et al. Evaluation of knowledge, awareness, and attitude toward emergency dental trauma management among the school teachers of Kolkata. Indian Journal of Dental Research. 2017;28(6):595. https://doi.org/10.4103/ijdr.ijdr_118_17.
15. Jokic NI, Kristic J, Cicvaric O, Simunovic-Erpusina M, Stanfel D, Bakarcic D. Preschool teachers' knowledge and attitudes about dental trauma in Rijeka, Croatia: a cross-sectional study. Journal of Oral Research. 2021 Aug 30;10(4):1–7. https://doi.org/10.17126/joralres.2021.054.
16. Kurnaz S, Bayraktar C. School Teachers' Knowledge and Attitudes about the Emergency Management of Traumatic Dental Injuries in Turkey. Community Dental Health [Internet]. 2021 Aug 31 [cited 2023 Feb 1];38(3):215–9. Available from: https://pubmed.ncbi.nlm.nih.gov/34029019/
17. Nowosielska M, Bagińska J, Kobus A, Kierklo A. How to Educate the Public about Dental Trauma—A Scoping Review. International Journal of Environmental Research and Public Health. 2022 Feb 21;19(4):2479.https://doi.org/10.3390/ijerph19042479
18. Baig I, Azam S. Knowledge Level and Practice of Primary School Teachers Regarding Traumatic Dental Injuries and Their Emergency Management in Twin Cities. Journal of Health and Rehabilitation Research. 2024 Jun 22;4(2):1617–22. https://doi.org/10.61919/jhrr.v4i2.1135.
19. Alharbi ZF, Mohammed Ali Habibullah. Knowledge, Attitudes, and Practices of School Teachers Regarding Dental Trauma and its Emergency Management in Madinah, Saudi Arabia: A Questionnaire-Based Online Cross-Sectional Survey. Journal of pharmacy and bioallied sciences. 2023 Jul

1;15(Suppl 1):S775–82. https://doi.org/10.4103/jpbs.jpbs_107_22
20. Saud Y, Siddiqui A, Al-Ateeq F, Al-Zuayzi A, Alsayegh M, Saad Almansour O, et al. Pesquisa Brasileira em Odontopediatria e Clínica Integrada. Pesquisa Brasileira Em Odontopediatria E Clinica Integrada [Internet]. 2019 [cited 2023 Apr 24];19(1):4757. Available from: https://www.scielo.br/j/pboci/a/MNF8qW5YFQ49wYSdv7t3sbB/?format=pdf&lang=en.
21. Mayasari Y, Setia Wibowo RD. Teachers' Knowledge About Dental Trauma and its Management in Primary Schools in Jakarta, Indonesia. Journal Research of Social, Science, Economics, and Management. 2022 Mar 15;1(8):1061–71. https://doi.org/10.36418/jrssem.v1i8.132
22. Gupta J, Verma L, Passi S. Knowledge of Physical Education Teachers of Chandigarh with Regard to Emergency Management of Avulsed Teeth at School. Journal of South Asian Association of Pediatric Dentistry. 2022 Mar 29;5(1):17–21. https://doi.org/10.5005/jp-journals-10077-3216.
23. Hajar Attarzadeh, Fatemeh Kebriaei, Sadri L, Foroughi E, Mehdi Taghian. Knowledge and Attitudes of Elementary Schoolteachers on Dental Trauma and its Management in Yazd, Iran. DOAJ (DOAJ: Directory of Open Access Journals). 2017 Sep 1;18(3):212–8.
24. Nagarajappa R, Naik D. Emergency management of dental injury; preparedness among school teachers in Bhubaneswar, India. Roczniki Państwowego Zakładu Higieny. 2020 Sep 14;71(3):329–39. https://doi.org/10.32394/rpzh.2020.0131
25. Kadulkar N, Kataki R, Deka A, Thonai S, Kadulkar N, Kataki R, et al. Replantation of an Avulsed Tooth: A Case Report. Cureus [Internet]. 2023 May 18;15(5). https://doi.org/10.7759/cureus.39198. Available from: https://www.cureus.com/articles/154844-replantation-of-an-avulsed-tooth-a-case-report#
26. Al-Khalifa K, AlYousef Y. Awareness of dental trauma management among school teachers in Dammam, Saudi Arabia. Saudi Journal of Medicine and Medical Sciences. 2022;10(1):49. https://doi.org/10.4103/sjmms.sjmms_306_20.