Knowledge regarding emergency management of avulsed teeth among elementary school teachers in Jaboatão dos Guararapes, Pernambuco, Brazil

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ABSTRACT

Objective: The purpose of the present study was to assess the knowledge regarding emergency management of tooth avulsion among elementary schoolteachers in the city of Jaboatão dos Guararapes, Pernambuco, Brazil.

Materials and Methods: A total of 338 teachers answered a questionnaire with items on emergency procedures following tooth avulsion.

Results: The majority of teachers (89.1%) had received no previous orientation regarding management of dental trauma and 81.4% had not witnessed an accident in which tooth avulsion had occurred. If an avulsed tooth had fallen to the ground, 84.3% of the teachers said they would pick it up, and 67.8% of them stated that they would clean it with water or some other liquid. A total of 33.1% said that they would take the student with the tooth in hand to a dental office. Of the respondents 88.5% would seek professional help immediately; 85.2% stated they would be unable to reimplant the avulsed tooth; and 39.3% would store the tooth in water.

Conclusions: A lack of technical information was observed among teachers regarding management of tooth avulsion. Educational campaigns at schools are necessary to modify the behavior of the teachers with regard to management of tooth avulsion. Further studies should be carried out for the assessment of teachers who have participated in educational campaigns to make the treatment of dental trauma a matter of public interest.

Key words: Attitude, avulsion, Brazil, child, knowledge, teacher

It is reported that 10% of the population has experience with dental trauma,[1] with tooth avulsion accounting for 1%–16% of cases.[2] Dental trauma is a common emergency in dental practice. If possible, an avulsed permanent tooth should be reimplanted.[3] However, the appropriate immediate treatment is often not performed due to a lack of knowledge among laypersons who generally provide the initial management prior to the child's contact with a dentist.[4] Postponement of evaluation by a dentist has been found to have an adverse effect on the prognosis of an avulsed tooth.[5]

An avulsed tooth must be reimplanted in its socket, but this cannot always be performed immediately and the success of the reimplanted tooth requires the maintenance of the vitality of the cells over the root.[6] Thus, immediate reimplantation of an avulsed tooth or its storage in a medium that allows the survival of these cells until reimplantation is fundamental. Furthermore, it is important to be aware that reimplantation should not be performed when a primary tooth has been avulsed as there is risk of injury to the underlying germ of the permanent successor.[7]

The recognition of the important role of laypersons in this respect has resulted in attempts to educate the public. According to Andreasen and Andreasen,[7] educational campaigns have been carried out in many countries, including Spain, the US, Brazil, Iceland, France, and Italy. Although such campaigns are commendable, they have been undertaken with little information on the existing levels

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of knowledge among laypersons and without any apparent prospective plans to evaluate their effectiveness.[5]

Schoolteachers are likely to be among the first to see a child immediately after an injury has occurred, and their knowledge regarding emergency procedures is critical to ensure good prognosis of the clinical treatment.[8] Therefore, the purpose of the present study was to evaluate knowledge regarding tooth avulsion and its management among schoolteachers in the city of Jaboatão dos Guararapes, Pernambuco, Brazil. Information was collected using a specific questionnaire.

MATERIALS AND METHODS

This study was approved by the university's ethics committee (Process 158/07), and informed written consent was obtained from each participant.

The questionnaire was distributed among 800 school teachers in 54 schools in Jaboatão dos Guararapes, Pernambuco, Brazil, in which children aged 2–17 years study. The questionnaire was based on previous studies carried out in Brazil.[9,10] The completed questionnaires were collected for analysis after 14 days. The teachers who answered the questionnaire were not identified.

The questionnaire was divided into two parts. Part I contained questions on age, gender, years of teaching experience, prior orientations regarding dental trauma, and whether the respondent had ever witnessed an accident resulting in an avulsed tooth [Table 1]. Part II of the questionnaire presented a typical example of a case of tooth avulsion, followed by questions on what the teacher would do in such a case as well as other specific questions on tooth avulsion [Table 2].

Data analysis involved calculation of absolute and percentage distributions and statistical measures, including mean, median, standard deviation, coefficient of variation, and minimum and maximum value (descriptive statistical techniques). For analysis, we used Pearson chi-square test; Fisher's exact test was used when the conditions for the chi-square were not verified. The odds ratio was determined to describe the strength of the associations. The statistical calculations were performed using the Statistical Package for Social Sciences® (SPSS®, version 13). The margin of error was set at 5.0%.

RESULTS

A total of 338 (42.25%) of the 800 schoolteachers answered the questionnaires. Most were women (96.7%), under 40 years of age (59.8%), had no previous orientation regarding dental trauma (89.1%), and had not witnessed an accident resulting in tooth avulsion (81.4%). A total of 37.6% had been working at the respective school for 16 years or more.

A total of 60.4% stated that an avulsed tooth is usually a permanent tooth, 22.5% were unsure, and 17.1% stated that it was usually a primary tooth. In the case of an avulsed tooth falling to the ground, 84.3% would pick it up and, among these, 67.8% would clean it with water or any other liquid; 22.2% would not clean the tooth; and 10.0% would clean it with a cloth or paper. A large proportion of the participants (33.1%) stated they would take the student with the tooth in hand to a dental office; 30.5% would opt to go to the student's house, 29.0% to a healthcare center, and 7.4% to some other place. A total of 88.5% stated they would seek professional help immediately, 6.5% would seek help within a few hours, 3.8% would seek help within 30 minutes, and 1.2% would seek help the next day. The vast majority of teachers (85.2%) stated that they would not be able to reimplant the avulsed tooth and would prefer to store it in water

Table 1: Part I of the questionnaire distributed among teachers in Jaboatão dos Guararapes, Pernambuco, Brazil

Sex	() Male () Female
Age	() ≤40 years old () >40 years old
Years of teaching experience	() <1 year () 1–5 years () 5–10 years () 10–15 years () ≥16 years
Have you ever received orientation on dental trauma?	() Yes () No
Have you ever witnessed an accident involving tooth avulsion (complete removal of a tooth from the mouth)?	() Yes ___ Times? () No

Table 2: Part II of the questionnaire distributed among teachers in Jaboatão dos Guararapes, Pernambuco, Brazil

During a football game, a 10-year-old male student has his central incisor (front tooth) avulsed (removed completely from the mouth)

Is the tooth (that is removed completely from the mouth) usually a permanent or a primary tooth?
() Permanent () Primary () Unsure
If a tooth has fallen on the ground, what would you do?
() Pick it up () Would not pick it up
What would you do if you picked up the tooth?
() Clean it with water or other liquid () Clean it with cloth or paper () Would not clean the tooth
If a student came with an avulsed tooth in his/her hand, where would you take him/her?
() Healthcare center (hospital or health post) () Dental office
() Student's home () Other place. Specify: _____
In your opinion, when should you seek professional help in the case of an avulsed tooth?
() Immediately () Within 30 minutes () Within a few hours () The next day
Would you be able to put (reimplant) a tooth back in its socket (the place of origin)?
() Yes () No
If you decided not to reimplant the tooth, what storage medium would you use?
() Water () Milk () Child's saliva () Saline solution () Fruit juice () Alcohol

(39.3%), saline solution (37.6%), alcohol (13.6%), milk (5.0%), or the child's saliva (4.5%).

The largest percentage differences based on teaching experience were in response to the question: 'If you decided not to reimplant the tooth, what storage medium would you use?' For those who would use alcohol, the values were 22.1% among those with less than 5 years of teaching experience, 9.3% among those with 6–15 years of experience, and 10.2% among those with ≥16 years of experience. There was no statistically significant association between the results of each question and years of teaching experience ($P<0.05$) [Table 3].

A significant association ($P=0.03$) was found between previous orientation regarding dental trauma and answers to the question, 'If a student came with an avulsed tooth in his/her hand, where would you take him/her?' Those with no previous orientation regarding dental trauma were more likely to opt for 'healthcare service' (30.2%) and 'student's home' (32.6%), whereas those who had received orientation were more likely to opt for 'dental office' (59.2%) [Table 4].

Significant associations were found between history of having witnessed an accident with tooth avulsion and answers to the questions: 'If a tooth has fallen to the ground, what would you do?' ($P=0.049$), for which 'pick the tooth up' was most commonly selected option (76.2%); 'If a student came with an avulsed tooth in his/her hand, where would you take him/her?' ($P=0.009$); 'Would you be able to put (reimplant) a tooth in its socket (place of origin)?' ($P=0.009$); and 'If you decided not to reimplant the tooth, what storage medium would you use?' ($P=0.006$), for which 'water' and 'saline solution' were most commonly selected by both teachers who had witnessed an accident with tooth avulsion and those who had not [Table 5].

DISCUSSION

It is important for school teachers to be informed about dental trauma and its management. However, most do not receive appropriate orientation regarding how to proceed in such cases.[11,12] In the present survey, only 10.9% of the school teachers reported having received orientation regarding emergency management of dental trauma.

Among the many accidents that occur at school, dental avulsion is one of the most common and teachers are often witnesses to this trauma.[10] In the present study, 18.6% of the teachers reported having witnessed accidents involving

Table 3: Evaluation of knowledge according to years of teaching experience

Question	Teaching experience						Total		*P* value
	0–5 years		6–15 years		≥16 years		*n*	%	
	n	%	*n*	%	*n*	%			
Is a tooth (removed completely from the mouth) usually a permanent or a primary tooth?									
Permanent	62	59.6	64	59.8	78	61.4	204	60.4	$P^{(1)}=0.482$
Primary	23	22.1	17	15.9	18	14.2	58	17.2	
Unsure	19	18.3	26	24.3	31	24.4	76	22.5	
If a tooth has fallen to the ground, what would you do?									
Pick the tooth up	89	85.6	88	82.2	108	85.0	285	84.3	$P^{(1)}=0.770$
Would not pick the tooth up	15	14.4	19	17.8	19	15.0	53	15.7	
What would you do if you picked the tooth up?									
Clean with water or other liquid	66	63.5	72	67.3	91	71.7	229	67.8	$P^{(1)}=0.129$
Clean with cloth or paper	17	16.3	9	8.4	8	6.3	34	10.1	
Would not clean the tooth	21	20.2	26	24.3	28	22.0	75	22.2	
If a student came with an avulsed tooth in his/her hand, where would you take him/her?									
Healthcare center	31	29.8	33	30.8	34	26.8	98	29.0	$P^{(1)}=0.636$
Student's home	27	26.0	34	31.8	42	33.1	103	30.5	
Dental office	36	34.6	31	29.0	45	35.4	112	33.1	
Other place	10	9.6	9	8.4	6	4.7	25	7.4	
In your opinion, when should you seek professional help in the case of an avulsed permanent tooth?									
Immediately	92	88.5	97	90.7	110	86.6	299	88.5	$P^{(1)}=0.309$
Within 30 minutes	4	3.8	4	3.7	5	3.9	13	3.8	
Within a few hours	8	7.7	6	5.6	8	6.3	22	6.5	
The next day	–	–	–	–	4	3.1	4	1.2	
Would you be able to put (reimplant) a tooth back in its socket (the place of origin)?									
Yes	21	20.2	12	11.2	17	13.4	50	14.8	$P^{(1)}=0.158$
No	83	79.8	95	88.8	110	86.6	288	85.2	
If you decided not to reimplant the tooth, what storage medium would you use?									
Water	37	35.6	45	42.1	51	40.2	133	39.3	$P^{(1)}=0.071$
Milk	5	4.8	9	8.4	3	2.4	17	5.0	
Child's saliva	4	3.8	4	3.7	7	5.5	15	4.4	
Physiological saline	35	33.7	39	36.4	53	41.7	127	37.6	
Alcohol	23	22.1	10	9.3	13	10.2	46	13.6	
Total group	104	100.0	107	100.0	127	100.0	338	100.0	

(1)Pearson chi-square test

Table 4: Evaluation of knowledge according to previous orientation regarding dental trauma

Question	Orientation regarding dental trauma						*P* value	OR (95% CI)
	Yes		No		Total			
	n	%	*n*	%	*n*	%		
Is a tooth (removed completely from the mouth) usually a permanent or primary tooth?								
Permanent	22	59.5	182	60.5	204	60.4	$P^{(1)}$=0.697	1.19 (0.49 to 2.92)
Primary	8	21.6	50	16.6	58	17.2		1.58 (0.54 to 4.63)
Unsure	7	18.9	69	22.9	76	22.5		1.00
If a tooth had fallen to the ground, what would you do?								
Pick the tooth up	33	89.2	252	83.7	285	84.3	$P^{(1)}$=0.388	1.60 (0.54 to 4.73)
Would not pick the tooth up	4	10.8	49	16.3	53	15.7		1.00
What would you do if you picked the tooth up?								
Clean with water or other liquid	30	81.1	199	66.1	229	67.8	$P^{(1)}$=0.136	1.73 (0.69 to 4.34)
Clean with cloth or paper	1	2.7	33	11.0	34	10.1		0.35 (0.04 to 3.01)
Would not clean the tooth	6	16.2	69	22.9	75	22.2		1.00
If a student came with an avulsed tooth in his/her hand, where would you take him/her?								
Healthcare center	7	18.9	91	30.2	98	29.0	$P^{(1)}$=0.003*	0.56 (0.14 to 2.36)
Student's home	5	13.5	98	32.6	103	30.5		0.37 (0.08 to 1.68)
Dental office	22	59.5	90	29.9	112	33.1		1.79 (0.49 to 6.53)
Other place	3	8.1	22	7.3	25	7.4		1.00
In your opinion, when should you seek professional help in the case of an avulsed permanent tooth?								
Immediately	34	91.9	265	88.0	299	88.5	$P^{(2)}$=1.000	1.28 (0.29 to 5.73)
Within 30 minutes	1	2.7	12	4.0	13	3.8		0.83 (0.07 to 10.20)
Within a few hours	2	5.4	20	6.6	22	6.5		1.00
The next day	–	–	4	1.3	4	1.2		**
Would you be able to put (reimplant) a tooth back in its socket (the place of origin)?								
Yes	8	21.6	42	14.0	50	14.8	$P^{(1)}$=0.215	1.00
No	29	78.4	259	86.0	288	85.2		0.59 (0.25 to 1.37)
If you decided not to reimplant the tooth, what storage medium would you use?								
Water	9	24.3	124	41.2	133	39.3	$P^{(1)}$=0.390	0.40 (0.14 to 1.16)
Milk	2	5.4	15	5.0	17	5.0		0.74 (0.14 to 3.99)
Child's saliva	2	5.4	13	4.3	15	4.4		0.86 (0.16 to 4.65)
Physiological saline	17	45.9	110	36.5	127	37.6		0.86 (0.33 to 2.23)
Alcohol	7	18.9	39	13.0	46	13.6		1.00
Total group	202	100.0	136	100.0	338	100.0		

**Unable to determine due to frequency of zero. $^{(1)}$Pearson chi-square test; $^{(2)}$Fisher's exact test. OR: Odds ratio; CI: confidence interval

tooth avulsion, and 26.7% of these teachers reported having witnessed such accidents more than once.

The lack of knowledge among teachers regarding emergency procedures following dental trauma is readily apparent. In cases of dental avulsion, most teachers do not know how to manage the event and have no knowledge regarding the benefits of correct early treatment.[13,14] According to the authors cited, teachers are unaware of which dentition is affected. The present study corroborates these findings, as 60.4% of the teachers marked 'permanent' and 39.6% (134 teachers) marked either 'primary' or 'unsure' in response to the question addressing an avulsed central incisor in a 10-year-old boy. While the difference did not achieve statistical significance, it demonstrates that educators need more information on this subject.

A total of 84.3% of teachers said that they would pick up an avulsed tooth from the ground. However, they revealed a lack of awareness regarding the best form of cleaning the tooth, as 67.8% stated they would clean it with 'water or other liquid,' 10.0% said they would use 'cloth or paper,' and 22.2% 'would not clean the tooth.' Among the teachers who had witnessed a tooth avulsion (76.2%) [Table 5], their conduct was significantly associated with picking up the tooth (P=0.049), but there was no significant association with cleaning it (P=0.306). The lack of knowledge and training makes teachers unprepared to appropriately manage accidents involving dental trauma in schoolchildren.[15,16]

The actions carried out following a tooth avulsion affect the prognosis. Thus, teachers should be aware of the appropriate procedures in such situations.[8–11,13,16,17] In the present study, teachers were asked, 'If a student came with an avulsed tooth in his/her hand, where would you take him/her?'. Although the answer marked most was 'dental office,' there was no statistically significant difference between answers. 'Student's home' was the second most marked option (30.5%), followed by 'Healthcare center' (29%). Although there was no significant association between teachers who had witnessed a previous accident with tooth avulsion and those that had not, the majority (62.1%) said that they would take the student to the dentist.

As the prognosis of an avulsed tooth depends on the time lapse between injury and treatment, it is necessary for either the patient or someone else at the scene to reimplant the tooth immediately.[8,11,16] In the present study, 288 teachers, including those who had witnessed cases of tooth avulsion, stated they would be unable to reimplant the tooth in its socket.

Table 5: Evaluation of knowledge according to history of having witnessed a previous accident with tooth avulsion

Question	History of having witnessed an accident with tooth avulsion						*P* value	OR (95% CI)
	Yes		No		Total			
	n	%	*n*	%	*n*	%		
Is a tooth (removed completely from the mouth) usually a permanent or primary tooth?								
Permanent	46	73.0	158	57.5	204	60.4	$P^{(1)}$=0.057	2.47 (1.11 to 5.52)
Primary	9	14.3	49	17.8	58	17.2		1.56 (0.56 to 4.33)
Unsure	8	12.7	68	24.7	76	22.5		1.00
If a tooth had fallen to the ground, what would you do?								
Pick the tooth up	48	76.2	237	86.2	285	84.3	$P^{(1)}$=0.049*	0.51 (0.26 to 1.01)
Would not pick the tooth up	15	23.8	38	13.8	53	15.7		1.00
What would you do if you picked the tooth up?								
Clean with water or other liquid	38	60.3	191	69.5	229	67.8	$P^{(1)}$=0.306	0.73 (0.38 to 1.41)
Clean with cloth or paper	9	14.3	25	9.1	34	10.1		1.33 (0.52 to 3.40)
Would not clean the tooth	16	25.4	59	21.5	75	22.2		1.00
If a student came with an avulsed tooth in his/her hand, where would you take him/her?								
Healthcare center	17	27.0	81	29.5	98	29.0	$P^{(1)}$=0.009*	0.27 (0.10 to 0.69)
Student's home	18	28.6	85	30.9	103	30.5		0.27 (0.11 to 0.69)
Dental office	17	27.0	95	34.5	112	33.1		0.23 (0.09 to 0.59)
Other place	11	17.5	14	5.1	25	7.4		1.00
In your opinion, when should you seek professional help in the case of an avulsed permanent tooth?								
Immediately	52	82.5	247	89.8	299	88.5	$P^{(2)}$=0.314	0.56 (0.21 to 1.50)
Within 30 minutes	4	6.3	9	3.3	13	3.8		1.19 (0.26 to 5.34)
Within a few hours	6	9.5	16	5.8	22	6.5		1.00
The next day	1	1.6	3	1.1	4	1.2		**
Would you be able to put (reimplant) a tooth back in its socket (the place of origin)?								
Yes	16	25.4	34	12.4	50	14.8	$P^{(1)}$=0.009*	1.00
No	47	74.6	241	87.6	288	85.2		0.41 (0.21 to 0.81)
If you decided not to reimplant the tooth, what storage medium would you use?								
Water	27	42.9	106	38.5	133	39.3	$P^{(1)}$=0.006*	1.42 (0.57 to 3.52)
Milk	6	9.5	11	4.0	17	5.0		3.04 (0.84 to 10.92)
Child's saliva	7	11.1	8	2.9	15	4.4		4.87 (1.34 to 17.79)
Physiological saline	16	25.4	111	40.4	127	37.6		0.80 (0.31 to 2.10)
Alcohol	7	11.1	39	14.2	46	13.6		1.00
Total Group	63	100.0	275	100.0	338	100.0		

*$P \leq 0.05$, **Unable to determine due to frequency of zero. (1)Pearson chi-square test; (2)Fisher's exact *test*. OR: Odds ratio; CI: confidence interval

Different storage media can be used for an avulsed tooth: Milk, saliva, saline solution, and water (in order of preference). Although water is the most readily available, it should be the last option because it causes lysis of vital periodontal cells. Many teachers do not know what storage media is favorable for an avulsed tooth.[7,8,12,15,16] In the present study, although there was no statistically significant association, the most favored medium for storing an avulsed tooth was 'water' (39.3%), followed by 'saline solution' (37.6%). 'Milk' was in third place, selected by only 17 teachers. Among the teachers who had witnessed accidents involving tooth avulsion, 'water' was the most favored option (P<0.05), which corroborates the findings of the authors cited.

Many accidents occur at school, resulting mainly from recreational games, and injuries to both the primary and permanent dentition are frequent.[9] Correct management of trauma by the teachers is essential. However, the teachers surveyed in the present study demonstrated a lack of preparedness to handle such cases. Educational campaigns at schools are necessary to modify the approach of the teachers with regard to management of tooth avulsion. Further studies should be carried out for the assessment of teachers who have participated in educational campaigns to make the treatment of dental trauma a matter of public interest.

REFERENCES

1. Pavek DI, Radtke PK. Postreplantation management of avulsed teeth: An endodontic literature review. Gen Dent 2000;48:176-81; quiz 82-3.
2. Petersson EE, Andersson L, Sorensen S. Traumatic oral vs non-oral injuries. Swed Dent J 1997;21:55-68.
3. Mackie IC, Worthington HV. An investigation of replantation of traumatically avulsed permanent incisor teeth. Br Dent J 1992;172:17-20.
4. Andreasen JO, Borum MK, Jacobsen HL, Andreasen FM. Replantation of 400 avulsed permanent incisors. 4. Factors related to periodontal ligament healing. Endod Dent Traumatol 1995;11:76-89.
5. Hamilton FA, Hill FJ, Mackie IC. Investigation of lay knowledge of the management of avulsed permanent incisors. Endod Dent Traumatol 1997;13:19-23.
6. Hammarstrom L, Blomlof L, Lindskog S. Dynamics of dentoalveolar ankylosis and associated root resorption. Endod Dent Traumatol 1989;5:163-75.
7. Flores MT, Andersson L, Andreasen JO, Bakland LK, Malmgren B, Barnett F, *et al*. Guidelines for the management of traumatic dental injuries. II. Avulsion of permanent teeth. Dent Traumatol 2007;23:130-6.
8. Mori GG, Turcio KH, Borro VP, Mariusso AM. Evaluation of the knowledge of tooth avulsion of school professionals from Adamantina, Sao Paulo, Brazil. Dent Traumatol 2007;23:2-5.

9. Pacheco LF, Filho PF, Letra A, Menezes R, Villoria GE, Ferreira SM. Evaluation of the knowledge of the treatment of avulsions in elementary school teachers in Rio de Janeiro, Brazil. Dent Traumatol 2003;19:76-8.
10. Al-Jundi SH, Al-Waeili H, Khairalah K. Knowledge and attitude of Jordanian school health teachers with regards to emergency management of dental trauma. Dent Traumatol 2005;21:183-7.
11. Hamilton FA, Hill FJ, Holloway PJ. An investigation of dento-alveolar trauma and its treatment in an adolescent population. Part 2: Dentists' knowledge of management methods and their perceptions of barriers to providing care. Br Dent J 1997;182:129-33.
12. 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.
13. McIntyre JD, Lee JY, Trope M, Vann WF Jr. Elementary school staff knowledge about dental injuries. Dent Traumatol 2008;24:289-98.
14. McIntyre JD, Lee JY, Trope M, Vann WF Jr. Effectiveness of dental trauma education for elementary school staff. Dent Traumatol 2008;24:146-50.
15. Caglar E, Ferreira LP, Kargul B. Dental trauma management knowledge among a group of teachers in two south European cities. Dent Traumatol 2005;21:258-62.
16. Panzarini SR, Pedrini D, Brandini DA, Poi WR, Santos MF, Correa JP, *et al*. Physical education undergraduates and dental trauma knowledge. Dent Traumatol 2005;21:324-8.
17. de Franca RI, Traebert J, de Lacerda JT. Brazilian dentists' knowledge regarding immediate treatment of traumatic dental injuries. Dent Traumatol 2007;23:287-90.

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