



CODEN [USA]: IAJ PBB

ISSN : 2349-7750

INDO AMERICAN JOURNAL OF PHARMACEUTICAL SCIENCES

SJIF Impact Factor: 7.187

<http://doi.org/10.5281/zenodo.5082919>
Online at: <http://www.iajps.com>

Research Article

DETERMINATION OF THE LEVEL OF KNOWLEDGE OF TEACHERS AND PEDIATRIC STUDENTS IN PROVIDING FIRST AID FOR ACUTE TOOTH TRAUMA

Malanova¹ O.A., Morozova¹ N.S., Maltseva¹ A.G.

Federal State Autonomous Educational Institution of Higher Education I.M. Sechenov First
Moscow State Medical University of the Ministry of Health of the Russian Federation (Sechenov
University)

¹Department of Pediatric Dentistry and Orthodontics, Moscow, Russia

Article Received: June 2021

Accepted: June 2021

Published: July 2021

Abstract:

Aim: to evaluate the level of knowledge about dental trauma injury and first aid skills among teachers of educational institutions by means of a survey in Moscow, Russia. Materials and methods: A questionnaire, consisting of 4 parts and including 20 questions, including questions from the category of own experience in working with this problem, awareness of the problem of complete dislocation of the tooth, first aid skills and motivation for training. Several questions have multiple answers. The survey accepted 56 people from 1 educational institution and 66 pediatric students from the university. Results: the study indicated the knowledge level of teachers and students to be quite low. Early help reduces the risk of complications. The priority treatment provided within the educational institution will seriously affect the increase in the number of positive outcomes. Timely assistance significantly reduces the risk of developing complications that can negatively affect the psycho-emotional health of the child in adolescence. Early diagnosis, prophylaxis or treatment of dentate abnormalities at an early age help to avoid further progression of pathologies, save material means and time. Conclusions: the authors identified a lack of first aid skills in working with children who received an acute tooth injury, as a result of this, the need was revealed to train teachers of school educational institutions and to train medical students of the speciality «Pediatrics» in theoretical and practical foundations for this group of pathologies, to conduct further clinical studies that will improve the epidemic situation around the world and in Russia in particular.

Keywords: dental trauma injury, teachers, educational organization, first aid, pediatrics.

Corresponding author:**Malanova Olga Andreevna,**

Postgraduate Student of Department of Pediatric Dentistry and Orthodontics,
Sechenov University, Moscow, Russia.

e-mail: malanova_o_a@staff.sechenov.ru.

QR code



Please cite this article in press Malanova Olga Andreevna *et al.*, *Determination Of The Level Of Knowledge Of Teachers And Pediatric Students In Providing First Aid For Acute Tooth Trauma...*, *Indo Am. J. P. Sci*, 2021; 08(07).

INTRODUCTION:

Acute tooth trauma is a serious dental pathology involving tooth tissues and periapical tissues directly in the process [3]. The trauma affects the psycho-emotional state of the child and also causes physical damage manifested in a function disorder, pain and occlusion disorder [5]. According to the frequency of occurrence, school is in second place after home, making up 29-30% of injuries according to various studies [2]. In this regard, the importance of providing first aid in places where children spend the most time outside the parental home, namely in kindergartens, schools and other educational institutions, is growing. Competent and timely first aid can significantly reduce the risk of complications and reduce the cost of further treatment.

The aim of this study is to clarify teachers' and pediatric students' awareness of this pathology and the availability of first aid knowledge and skills.

MATERIALS AND METHODS:

This study was conducted at an educational institution in Moscow. The study was coordinated with the management of the institution. The data were collected through a questionnaire, which is divided into 4 parts and includes 20 items. The first part consists of 4 questions about the age, profession, seniority and number of own children. The second part includes 5 questions on the topic of general familiarity with pathology. The third part consists of 6 questions on the topic of knowledge about complete tooth dislocation. The main goal of the fourth part of the questionnaire is to find out whether there is motivation to obtain first aid skills for children with acute dental injury.

The survey was developed by researchers at Sechenov University. All participants gave their voluntary informed consent to the survey as part of complete anonymity. To avoid misunderstanding by interviewees, researchers were always present when teachers filled out their forms. To ensure anonymity, the review does not mention either the names of

employees or the educational institution where the survey was conducted.

RESULTS:

122 people took part in the survey, of these, 109 women (89.3%), 13 men (10.7%). 52 people indicated their position: 48 of them work as a teacher, one person each works as a social teacher, director, deputy director, deputy director for educational work, 66 are pediatric students.

The occurrence and familiarity with the first aid procedure for acute dental injury was demonstrated. Less than half of teacher respondents (42.9%) faced this pathology, with 7 people (5.7%) more than once. All interviewees take the disease seriously. Most women (64.3%) experienced acute tooth injury during children's games, a little bit less (28.6%) - on walks and 21.4% - during sports. In the pediatric students group less than half of respondents (19.9%) faced this pathology, with 8 people (11.9%) more than once. Most of the respondents (28.8%) experienced acute tooth injury during children's games, five (12.8%) - on walks and eleven more people (28.8%) - during sports.

Awareness of complete tooth dislocation was also described (Table 1). The almost half of respondents replied that they were familiar with this term (53,2%). The most popular temporary reservoir for storing a tooth is a gauze napkin: 68 people (55.7%) chose it. The second most popular choice is antiseptic solution: 23 respondents chose it (18.8%). 10 people (8%) would choose milk as the optimal temporary storage medium for the tooth, 5 person (4%) would place the tooth in water, 5 (4%) in salt water. 76 respondents (62.3%) would look for a dislocated tooth in the external environment, 46 (37.7%) would not. Less than half of respondents (32.8%) consider tooth replantation possible, however, 86 respondents (70.5%) consider that the part to hold a tooth is important, while 36 respondents (29.5%) do not find this stage important.

Table 1. 1. Knowledge of dental avulsion.

Question	Answer	n (%)
Do you know the term <i>dental avulsion</i> ?	Yes	65 (53,2)
	No	57 (46,8)
Have you ever encountered dental avulsion?	Yes	3 (2,5)
	No	119 (97,5)
In what environment would you place a tooth, if you found it in the external environment?	In gauze napkin	68 (55,7)
	Into the water	5 (4)
	Into salt water	5 (4)
	In milk	10 (8)
	In antiseptic solution	23 (18,8)
	Would not put anywhere	11 (9,5)
Would you look for an extracted tooth in the external environment?	Yes	76 (62,3)
	No	46 (37,7)
Does it matter to you for which part to hold a tooth?	Yes	86 (70,5)
	No	36 (29,5)
In your opinion, is it possible to insert back a tooth that has been in the external environment?	Yes	40 (32,8)
	No	82 (67,2)

The second table (table 2) collects data on first aid skills and motivation for learning. The majority of respondents (78.6%) are able to provide cardiopulmonary resuscitation, but absolutely all respondents were not taught first aid skills for acute dental injury. 84.4% would like to learn these skills. The format of video videos is convenient for the majority of respondents (56.5%), 55 participants (45%) chose the format of lectures combined with training in practical skills, brochures and online - lectures are convenient for 20 (16.4%) and 27 (22.2%) people, respectively. 11 people (9%) find learning not interesting.

Table 2. First aid training.

Вопрос	Ответ	n (%)
Do you have the skills to provide cardiopulmonary resuscitation?	Yes	96 (78,6)
	No	26 (21,4)
Have you ever been taught how to manage acute dental trauma?	Yes	0 (0)
	No	122 (100)
Would you like to learn the rules of first aid for acute dental trauma?	Yes	103 (84,4)
	No	19 (15,6)
If so, which format is the most convenient for you? (multiple choice)	Video clips	69 (56,5)
	Lecture + practical skills	55 (45)
	Brochures	20 (16,4)
	Online lectures	27 (22,1)
	Not interested	11 (9)

DISCUSSION:

This is the second survey conducted in the Russian Federation to assess the level of knowledge and training of teachers working with children. In different regions of the world, the school ranks second or third in the incidence of acute dental injury, and the importance of timely treatment of this group of pathologies has been confirmed by clinical studies.

As we see from the results of the survey, education workers have a lack of knowledge and skills to provide first aid. None of the teachers was trained in these skills, although more than half of the respondents are able to provide cardiopulmonary resuscitation.

Just 3% of respondents replied that they had met with this injury. At the same time, a lack of knowledge can be seen on the example of the third and fourth blocks

of questions. "In which environment would a tooth be placed, finding it in the external environment?": only 10 (8%) of the participants answered correctly. The greatest discrepancies in the answers were caused by a question with a sequence of stages of first aid for acute dental injury. It can be established that teachers have a competent general idea. The most important points, such as "stop the bleeding" and "calm the child," teachers would be among the first, however, after these two stages, discrepancies are noticeable. At the same time, it was established that with the imminent and competent provision of care, the probability of developing complications decreases.

The most frequent type of trauma in children is uncomplicated tooth fracture [11]. Understanding it in more detail, it can be established that the percentage of complications with a crown fracture within the enamel was 4.1%, with a fracture in the enamel and dentin zone - 16.8% [13]. However, when the child turned to the dentist for 2 hours after the injury, the frequency of complications decreased and was 3.5% with the tooth apex not closed and 11.9% with the tooth apex closed, from 2 to 24 hours - 17.3% and 20.1%, respectively. Even higher, this percentage when the child is converted a day later is 35.5% and 36.0%.

In studies of pierced tooth dislocation, the percentage of successful outcome was found to be between 78.7% and 95% [1, 4, 7, 8, 9, 12]. At the same time, the lowest percentage of complications was detected with immediate care [9]. The situation remains favorable, even with such a serious at first glance pathology as a complete dislocation of the tooth. The proportion of complications arising from tooth replantation varies from 2.4% to 17.5% over 3 years of clinical observations. At the same time, not a single tooth was lost [6].

Factors such as the degree of closure of the apex of the tooth, intrusion, seizure of periapical tissues affect the positive outcome, but they cannot be evaluated by people without medical education, so the only correct solution is to send the child to the dentist as quickly as possible. At the same time, the low awareness of teachers (lack of knowledge of algorithms and key stages of assistance) aggravates the situation. In a study by Nestor Tzimpoulas *et al.* high efficiency of education staff training was shown [10], which confirms the success of treatment of this pathology by involving more employees.

Based on the above information, it can be concluded that with timely treatment, the number of positive outcomes is seriously increasing. Early diagnosis,

prophylaxis or treatment of dentate abnormalities at an early age help to avoid further progression of pathologies, save material means and time. Training teachers through state programs will help improve both the situation in general and, in particular, the pathology of acute dental injury.

CONCLUSION:

Interviewed teachers and pediatric students have a lack of knowledge and skills to provide first aid for acute dental injury. It is proved that timely care reduces the risk of complications. Due to the high workload of teachers and students, it is necessary to choose an informative method of teaching with the best efficiency. The team of authors hopes that further research on acute dental injury will improve the epidemic situation around the world and in Russia in particular.

Conflict of Interest Statement. The authors declare no conflict of interest.

REFERENCES:

1. Al-Badri S, Kinirons M, Cole B, Welbury R. Factors affecting resorption in traumatically intruded permanent incisors in children. *Dent Traumatol* 2002;18:73-6.
2. Alhaddad B, N. K. Rózsa, I. Tarján. Dental trauma in children in Budapest. A retrospective study. *Eur J Paediatr Dent*. 2019 Jun;20(2):111-115.
3. Berti GO, Hesse D, Bonifacio CC, Raggio DP, Bönecker MJ. Epidemiological study of traumatic dental injuries in 5- to 6-years old Brazilian children. *Braz Oral Res*. 2015;29:1-6.
4. Ebeleseder KA, Santler G, Glockner K, Hulla H, Pertl C, Quehenberger F. An analysis of 58 traumatically intruded and surgically extruded permanent teeth. *Endod Dent Traumatol* 2000;16:34-9.
5. Ferreira JMS, Andrade EMF, Katz CRT, Rosenblatt A. Prevalence of dental trauma in deciduous teeth of Brazilian children. *Dent Traumatol*. 2009 Apr;25(2):219-23.
6. Hermann NV, Lauridsen E, Ahrensburg SS, Gerds TA, Andreasen JO. Periodontal healing complications following extrusive and lateral luxation in the permanent dentition: a longitudinal cohort study. *Dent Traumatol*. 2012;28(5):394-402.
7. Humphrey JM, Kenny DJ, Barrett EJ. Clinical outcomes for permanent incisor luxations in a pediatric population. I. Intrusion. *Dent Traumatol* 2003;19:266-73.

8. Kinirons MJ, Sutcliffe J. Traumatocally intruded permanent incisors: a study of treatment and outcome. *Br Dent J* 1991;170:144-6.
9. Moreira Neto JJ, Gondim JO, Carvalho FM, Giro EM. Longitudinal clinical and radiographic evaluation of severely intruded permanent incisors in a pediatric.
10. Niviethitha S, Bhawarlal C, Ramkumar H, Dhakshanamoorthy S, Shanmugam H. Effectiveness of an audio-visual aid on the knowledge of school teachers regarding the emergency management of dental injuries. *Dent Traumatol.* 2018;34(4):290-296.
11. Ravn JJ. Follow-up study of permanent incisors with enamel fractures as a result of an acute trauma. *Scand J Dent Res* 1981;89:213-7.
12. Stewart C, Dawson M, Phillips J, Shafi I, Kinirons M, Welbury R. A study of the management of 55 traumatically intruded permanent incisor teeth in children. *Eur Arch Paediatr Dent* 2009;10:25-8
13. Wang C, Qin M, Guan Y. Analysis of pulp prognosis in 603 permanent teeth with uncomplicated crown fracture with or without luxation. *Dent Traumatol.* 2014;30(5):333-337.