

Evaluation of the knowledge of dental trauma in academic students of pedagogy and physical education courses

Avaliação do conhecimento dos acadêmicos dos cursos de pedagogia e educação física

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Resumo

Introdução: Traumatismos dentários são considerados problema de saúde pública, sendo a segunda maior demanda de urgências odontológicas, tendo sua maior ocorrência em ambiente escolar, atribuindo aos professores a responsabilidade de adotar as primeiras condutas. **Objetivo:** Avaliar o conhecimento de acadêmicos do último ano dos cursos de educação física e pedagogia da Universidade Federal do Espírito Santo frente aos traumatismos dentários. **Material e método:** Estudo descritivo transversal onde foram aplicados 106 questionários, sendo 55 no curso de pedagogia e 51 no curso de educação física envolvendo dados sociodemográficos e conhecimento sobre injúrias dentárias. A análise estatística foi feita por meio do pacote estatístico SPSS 20. **Resultado:** 98,1% dos entrevistados não tiveram treinamento sobre traumatismos, 92,5% não se julgaram aptos a prestar socorro diante de um trauma, mas consideraram importante (55,7%). Sobre a avulsão dentária a maioria respondeu que não reimplantaria e não possuem conhecimento sobre o tempo apropriado bem como é feito o armazenamento/transporte do elemento dentário. **Conclusão:** Os futuros docentes demonstraram despreparo e conhecimento deficiente diante das condutas em traumatismos, favorecendo prognósticos desfavoráveis, impactando negativamente na qualidade de vida das vítimas, no tocante a aspectos estéticos, funcionais e psicológicos. Evidencia-se, portanto, necessidade de treinamento e capacitação destes durante sua formação profissional.

Descritores: Traumatismo dentário; docentes; conhecimento; prognóstico.

Abstract

Introduction: Dental trauma is considered a public health problem, being the second most prominent dental emergency, whose greatest occurrence is in schools, assigning teachers the responsibility of administering first aid. **Objective:** To evaluate the knowledge of dental trauma among final-year's students of pedagogy and physical education courses at the Federal University of Espírito Santo. **Material and method:** A cross-sectional descriptive study was applied. A total of 106 questionnaires were answered by 55 students from the physical education course and 51, from the pedagogy course; comprised of socio-demographic data and knowledge of dental injuries. Statistical analysis was done using the statistical package SPSS 20. **Result:** 98.1% of the interviewees had no training on trauma, 92.5% considered themselves incapable of providing help when facing trauma, but considered the ability important (55.7%). When asked about tooth avulsion, most of them answered that they would not reimplant the tooth, were not aware of the appropriate time window to do so, or how the storage/transportation of the dental element was to be done. **Conclusion:** These future teachers showed unpreparedness and deficient knowledge



regarding trauma treatment procedures, favoring unfavorable prognoses which would negatively impact the quality of life of the victims in terms of aesthetic, functional and psychological aspects. Therefore, the need for dental trauma education during their professional training is evident.

Descriptors: Tooth injuries; teachers; knowledge; prognosis.

INTRODUCTION

Dental trauma can be defined as a high intensity aggression suffered by the dental element and its adjacent supporting structures, whose magnitude exceeds the resistance found in bone and dental tissues, and whose extension is directly related to the intensity, type and duration of the impact^{1,2}. Dental trauma is the second major cause of early tooth loss - surpassed only by caries - being among the main public health problems worldwide, affecting a considerable portion of the population experiencing from small lesions to avulsion and total tooth loss¹⁻³.

Studies show that dental trauma can negatively impact on a patient's quality of life in terms of self-esteem and social interaction, which can be explained by the type of trauma suffered, such as avulsion leading to aesthetic discomfort, and dislocations leading to smile disharmony; those patients will, then, tend to avoid smiling and speaking publicly³⁻⁵. Schools are one of the places with the highest occurrence of this trauma, since it is during the school phase that accidents such as falls are most common and the main cause of traumatic dental injuries. For a good prognosis and maintenance of the functioning element, it is essential that teachers care and treat these injuries as soon as possible, though, they often lack the basic knowledge of the necessary emergency procedures^{2,3}. High rates of violence, traffic accidents, and sports activities have also greatly contributed to the increase in the occurrence of dental trauma².

Given the high occurrence of dental trauma in schools, its community's limited training in it, and the great emotional impact that trauma can cause in patients, this study aims to evaluate the knowledge of final-year students of physical education and pedagogy courses at the Universidade Federal do Espírito Santo regarding dental trauma to the permanent dentition of the students enrolled in the schools where they work.

MATERIAL AND METHOD

An observational, quantitative research was conducted with a cross-sectional design. The study was developed with all the students in the last year of the physical education and pedagogy courses at the Federal University of Espírito Santo, of which 55 students studied pedagogy and 51, physical education, with ages ranging from 20 to 54 years old. Data were collected by two trained dental students via a two-section questionnaire: the first one related to socio-demographic data, and the second, multiple-choice section tested their knowledge of traumatic dental injuries. Participants were informed of the research, and voluntarily signed the Informed Consent Form. Subsequently, a questionnaire containing 16 questions was applied in the undergraduates' classroom. Descriptive statistics were performed, and the data were arranged and presented in tables with numbers and percentages. The statistical package Social Package Statistical Science (SPSS) version 20 was used. The project was approved by the Ethics and Research Committee of the Universidade Federal do Espírito Santo under opinion no. 700.069.

RESULT

In total, 106 questionnaires were applied and answered by 55 pedagogy and 51 physical education students, whose ages range from 20 to 54 years old. Most were between 20 and 24 years old (63.2%) and female (78.3%) (Table 1).

Table 2 shows the results of the students' knowledge and training on dental trauma. When asked if they had previously participated in any training on dental trauma, 98.1% answered they had never participated and did not consider themselves capable of helping an individual after the occurrence of dental trauma (92.5%), although they considered having this knowledge important (55.7%).

Table 3 shows students' reaction to tooth avulsion in permanent teeth. When questioned about what action should be adopted in cases of tooth avulsion, 30.2% believed that it should not be reimplanted, and 40.6% would not know what to do. When they stated that the tooth should be repositioned, only 23.6% believed that the procedure should take place in less than 30 minutes after the trauma, whereas, if immediate reimplantation was not possible, 40.6% answered not knowing what would be the best way of conditioning and transporting the tooth until it could be reimplanted.

Table 1. Socio-demographic characteristics of pedagogy and physical education students at Federal University of Espírito Santo

Variable	N	%
Age group		
20 to 24 years old	67	63.2
25 to 29 years old	19	17.9
30 to 39 years old	13	12.3
40 to 54 years old	7	6.6
Sex		
Men	23	21.7
Women	83	78.3
Course		
Pedagogy	55	51.9
Physical education	51	48.1
Current period 2014/2		
7 ^o	45	42.5
8 ^o	61	57.5
Total	106	100

Table 2. Knowledge and training on dental trauma of academic students of pedagogy and physical education courses at Federal University of Espírito Santo

Variable	N	%
Have you had any training (course, lecture) on dental trauma?		
Yes	2	1.9
No	104	98.1
Do you think you are capable of helping an individual after dental trauma has occurred?		
Yes	8	7.5
No	98	92.5
How important is the knowledge of emergency trauma treatment:		
Very important	43	40.5
Important	59	55.7
Indifferent	4	3.8
Has any individual under your supervision ever suffered dental trauma?		
Yes	6	5.7
No	100	94.3
Does the school where you do your internship have a dentist?		
Yes	10	9.4
No	60	56.6
I don't know	36	34.0

Table 2. Continued...

Variable	N	%
Do you know that dentist?		
Yes	8	7.5
No	44	41.6
The school doesn't have a dentist	54	50.9
Have you ever referred a trauma case to the school's dentist?		
Yes	1	0.9
No	74	69.9
The school doesn't have a dentist	31	29.2
Total	106	100

Table 3. Knowledge and actions on dental avulsion of the academic students of pedagogy and physical education courses at Federal University of Espírito Santo

Variable	N	%
In a game, one child hits another child's mouth with his elbow and a front tooth is completely removed from its place of origin due to trauma (avulsion). What is your opinion?		
There is no use for the tooth	2	1.9
The tooth must not be put back in place	32	30.2
The tooth must be replaced immediately	29	27.4
I don't know	43	40.5
If you believe that the tooth should be put back in its place, ideally it should be:		
In less than 30 minutes	25	23.6
Up to 2 days after the avulsion	9	8.5
The time after avulsion has no influence on reimplantation	7	6.6
Must not be relocated	18	17.0
I don't know	47	44.3
If you believe that the tooth should be put back in its place, before this, you should:		
Wash the tooth with soap and water	4	3.8
Disinfect the tooth with alcohol	12	11.3
Wash quickly with tap water only	25	23.6
Must not be relocated	28	26.4
I don't know	37	34.9
If you choose not to relocate the tooth to its place of origin, which means of transportation do you think would be ideal?		
Water	14	13.2
Saliva	4	3.8
Milk	12	11.3
Napkin	7	6.6
Physiological serum	20	18.9
Reimplanted	6	5.7
I don't know	43	40.5
A child was pushed and fell on his/her mouth; a piece of the front tooth was broken, but the child only lost the visible part of that tooth. What is your opinion?		
There is no use for the tooth's broken piece	13	12.3
The broken tooth piece must not be put back in place	13	12.3
The tooth piece must be kept for later replacement	52	49.0
I don't know	28	26.4
Total	106	100

DISCUSSION

A significant number of school accidents occur because children are involved in recreational activities. This is the reason why teacher participation in their immediate emergency management is essential for treatment success and prognosis, that is, the maintenance of the functioning element in the oral cavity. Thus, this study evaluated 106 students from the last periods of the pedagogy and physical education courses who will be working directly with these children, and, thus, should have minimum knowledge of dental trauma.

The data show unpreparedness and inadequate knowledge of the necessary immediate procedures, since 98.1% never had any training, such as courses or lectures on dental trauma, and felt, thus, unable to deal with situations like these (92.5%). Our data also corroborated the literature in that teachers and future teachers do not have the basic knowledge of dental trauma and feel unprepared to help a child who has suffered dental trauma, allowing for the rise and complication of sequelae and/or the tooth loss^{1,3,6,7}.

The knowledge of emergency trauma treatment, is seen as “very important” (40.6%), and “important” (55.7%), which shows their awareness of the necessity of minimum knowledge of the subject in their professional training. Our finding is corroborated by Vilela et al.⁷ (2019), in which 100% of the survey participants said that obtaining this kind of knowledge was necessary and that they would like to receive information and instructions on the subject. The immediate care of the victim of dentoalveolar trauma and, in particular, of avulsed teeth can decide the case prognosis. Therefore, it is necessary that education professionals working directly with children be informed of the means of prevention, management, storage and emergency care when facing these types of injuries^{5,8,9}.

In the more specific situation of tooth avulsion, immediate reimplantation should be carried out, but studies have shown that parents and teachers have little knowledge of how to maintain the functioning tooth element. There is an erroneous thought that avulsed elements should not be reimplanted, and the importance of immediate reimplantation for a good prognosis is not well disseminated^{7,8,10,11}. In this study, the future teachers also said that they did not know what they were supposed to do in such situations (40.6%) and believed that the tooth had no further use and, therefore, should not be repositioned (30.2%).

The period between tooth avulsion and reimplantation is of paramount importance for the avulsed tooth prognosis, as over time the periodontal ligament cells attached to the tooth necroses rapidly and the percentage of success decreases vertically^{3,6,7,8,12}. Extra-alveolar periods of more than two hours almost always result in intense resorption, and consequently dubious prognoses, rendering the time factor the most important pillar for recovery^{3,6,9,10}. However, most future teachers interviewed believe that the tooth should not be reimplanted (30.2%), and the portion who believe that it should be reinserted into the alveolus (27.4%) believe that they can wait up to two days, and that time is not a crucial factor.

If immediate reimplantation is not possible, the tooth should be stored, ideally in a container with milk, since it is easily accessible, has a pH and osmolarity compatible with that of vital cells and is relatively free of bacteria, favoring the maintenance of periodontal ligament vitality during the extra-alveolar period^{6,11}. However, in this study, only 11.3% chose milk as a means of transportation, which may contribute to a dubious prognosis regarding the vitality of the periodontal ligament and success of the reimplanted tooth. These results corroborate the findings of Scandiuzzi et al.⁶, where 23.7% stated that they did not know what they were supposed to do, and only 6% would pack the avulsed tooth in milk.

While the scientific literature highlights the efficiency of immediate reimplantation in permanent teeth, this rarely takes place^{6,7,8,12,13}. Most of the time, teeth are lost or inadequately stored, favoring the installation of sequelae leading to pulp necrosis, calcification, and root resorption, the main causes of permanent teeth loss after traumatic events^{7,14}. It is important to

emphasize that, in this scenario, success is inversely proportional to extra-alveolar time. The literature suggests the ideal time not to exceed a period of half an hour to avoid irreversible damage to the periodontal ligament cells which may result in element loss^{6,8,14}.

This scenario of unpreparedness attests the need for the inclusion of this theme in the curriculum of these future professionals in order to train them, and the implementation of health education campaigns, favoring the dissemination of information and, thus, improving prognoses^{7,8,12}. Factors such as immediate care, and the time needed to achieve success and reduce tooth loss associated with the correct handling in different situations justify this need^{5,6,10,13}. Physical education and pedagogy students need to be and feel prepared, since their workplace is referred by the literature as the one with the highest occurrence of traumatic events. It is also necessary that other studies be conducted, covering other regions with larger samples, and representing other realities.

CONCLUSION

The interviewees showed a lack of preparation or inadequate knowledge of dental trauma, i.e., what emergency procedures to adopt, resulting in the ease setting of unfavorable prognosis negatively impacting the quality of life of patients, in terms of aesthetic, functional and psychological aspects.

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CONFLICTS OF INTERESTS

The authors declare no conflicts of interest.

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