

Demographic characteristics and knowledge about dental trauma by physical education teachers in João Pessoa, Paraíba, Brazil

Características demográficas e conhecimento sobre traumatismos buco-dentários de profissionais de educação física do município de João Pessoa, PB

Herbert **GHERSEL**¹  0000-0002-9061-4983

Eloisa Lorenzo de Azevedo **GHERSEL**¹  0000-0001-9413-9246

Amanda Azevedo **GHERSEL**²  0009-0004-1559-9770

Bruna Letícia de Lima **CAETANO**³  0009-0008-9657-3263

Daniel de Santi **GURDIAN**⁴  0009-0004-6909-7303

ABSTRACT

Objective: To evaluate the demographic characteristics of physical education professionals, their knowledge on dental trauma, and related first aid management. It is well known that physical activities may pose dental trauma risks, and urgent care is essential to minimize damages. **Methods:** Exploratory research with descriptive nature and quantitative approach. The sample was selected by convenience and comprised 31 physical education professionals. A structured questionnaire developed on Google Forms® system was sent to the participants. The collected data were organized and analyzed. **Results:** Among the total sample, only 5 (16.1%) had information on the subject. When asked about specific actions to manage dental trauma, only few participants stated to the most appropriate approach. **Conclusion:** There is a widespread lack of knowledge on dental trauma and the correct and immediate management of such injuries. As these injuries occur frequently in the target population of their daily work, this lack of preparation can hinder and undermine the work of the dentist and cause irreversible harm to the victims.

Indexing terms: Statistics. Tooth injuries. Wounds and injuries.

RESUMO

Objetivo: Avaliar as características demográficas de profissionais de educação física, seu conhecimento sobre traumatismos buco-dentários e condução nos primeiros socorros. É sabido que atividades físicas são de risco para tais traumatismos e o pronto

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¹ Universidade Federal da Paraíba, Centro de Ciências da Saúde, Departamento de Odontologia Clínica e Social. Campus I, Cidade Universitária, 58051-900, João Pessoa, PB, Brasil. Correspondence to: <hg@academico.ufpb.br>.

² Faculdade de Medicina Nova Esperança. João Pessoa, PB, Brasil.

³ Consultório Particular. João Pessoa, PB, Brasil.

⁴ Clínica Particular. João Pessoa, PB, Brasil.

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atendimento é primordial para minimizar os danos causados. **Métodos:** Trata-se uma pesquisa exploratória, de natureza descritiva, com abordagem quantitativa. A amostra foi selecionada por conveniência e constituída por 31 profissionais Educadores Físicos. Foi desenvolvido um questionário estruturado transcrito para o sistema Google Formulários® e enviado aos participantes. Os dados coletados foram catalogados e analisados. **Resultados:** Do total da amostra, apenas 5 (16,1%) já tiveram alguma instrução sobre o tema. Quando questionados sobre ações mais específicas diante de traumatismos buco dentários, poucos apontaram a conduta mais indicada. **Conclusão:** Há um desconhecimento generalizado sobre traumatismo buco dentários e na correta e imediata condução em casos de tais ocorrências. Considerando que esses acidentes ocorrem com considerável frequência na população alvo de seu laboratório, essa falta de preparo pode dificultar e comprometer o trabalho do cirurgião-dentista e trazer prejuízos irreversíveis às vítimas.

Termos de indexação: Estatística. Traumatismos dentários. Ferimentos e lesões.

INTRODUCTION

Dentoalveolar traumas can affect both deciduous and permanent dentition and should be considered emergencies due not only to the damage to oral and dental tissues and future consequences but also due to the emotional impact on the patient, family members, or people involved at the time of the injury.

School-age children are among the most affected by this type of trauma, as revealed by the study of Santos et al. [1], which shows that 24.9% of injuries occur in children from 0 to 9 years and 50.9% up to 19 years. The same authors present data showing that the main causes of dentoalveolar trauma are sports (2.40%), interpersonal violence (8.30%), and accidental falls (22.69%), situations commonly found in schools. Aldrigui et al. [2] found a prevalence of 18.6% of traumas in permanent teeth, while Marchiori et al. [3] point out that 62% of traumas involve permanent upper central and lateral incisors.

Injuries to face structures, including teeth, bone tissue, or soft tissues, can result in impairment in various personal spheres with aesthetic, functional, and above all emotional implications that can strongly affect the psycho-emotional development of the individual [4].

A study based on systematic review and meta-analysis showed that 18 to 20% of adolescents in Latin America have suffered some kind of dental trauma, and there is a tendency towards a decrease in prevalence [2]. Boys, adolescents with lack of lip seal are the most affected by dental injuries, and a substantial number of the studied population did not receive adequate trauma treatment [5].

Professionals and physical education teachers who work with children can benefit from specific instructions on the approach and first aid in cases of dental trauma. Once it occurs, knowledge of basic first aid procedures is an important factor to manage the situation. Detecting the lack of knowledge in this group regarding the mentioned injuries could lead to the creation of information campaigns that would benefit physical education teachers, children, and dentists who often require the correct preliminary approach for a good prognosis.

Miranda et al. [6] show that those less prepared to provide correct care to traumatized patients are male teachers with low professional experience, no higher education, who have never dealt with a trauma case at school, and who have not received first aid training. According to Andreasen et al. [7], raising public awareness of dental trauma should be achieved through clear messaging, making the population aware of their role in saving teeth in case of injuries. This can be done through the dissemination of the topic in storybooks with illustrations, natural science textbooks, television, local press, the internet, brochures, posters, among others. Several countries such as Australia, Argentina, Chile, Denmark, France, Israel, and some regions of Brazil have already adopted this practice.

Costa et al. [8] state that 28.16% of the participants in their study had been called to manage a case of dental trauma, while only 20.39% had received some training. The authors report a ratio of 91.26% of participants considering important to receive education on the subject.

Junges et al. [9] found that 25.1% of elementary school teachers had not received any education on dental trauma, while 35.3% did not remember and 40.4% had received some training. Feldens et al. [6] report that 60.7% of teachers had not received any training, with 93.6% not having received specific training on dental traumas. In the same study, 41.7% claim to have been called to assist with such cases. Glendor [10], in his systematic review, states that teachers, including physical education teachers, are motivated to assist with trauma cases but lack enough knowledge.

The objective of this study is to evaluate the demographic characteristics of physical education teachers in the municipality of João Pessoa and their knowledge about dental trauma and first aid management in such cases.

METHODS

This descriptive exploratory research with a quantitative approach was carried out with a sample selected by convenience and consisting of 31 physical education professionals working in the city of João Pessoa/PB.

A structured questionnaire was developed based on the paper of Awk et al. [11], modified and adapted to Brazilian conditions by Costa et al. [8] and Junges et al. [9]. The questionnaire was transcribed into the Google Forms® system and electronically sent to the professionals, to be filled in anonymously.

The collected data were organized in an Excel® spreadsheet and analyzed using SPSS® statistical software. The results were presented in tables, with a descriptive analysis of the values. As the study involves human subjects, the research project was submitted to the Research Ethics Committee of the Health Sciences Center of the Federal University of Paraíba, through the Brazil Platform (CAAE: 59476422.4.0000.5188) and duly approved on September 22, 2022. All participants signed an informed consent form.

RESULTS AND DISCUSSION

Participants sample included 8 females (25.8%) and 23 males (74.2%). Costa et al. [8] worked with a sample of 89.81% males and 10.16% females, while Junges et al. [9] used a predominantly female sample (90.0% females, 10.0% males), a proportion similar to Traebert et al. [12]. The difference is probably due to the fact that the latter authors worked with primary school teachers, while the former author worked with physical education teachers, as in our research.

In this study, the age range varied from 20 to >50 years, as shown in table 1. Other authors, such as Feldens et al. [6] and Awk et al. [11], also worked with similar samples, with most respondents falling in the range of 20 to 39 years.

Most participants had been working as physical education professionals for more than 7 years, as shown in Table II, indicating a reliable professional experience. This is consistent with the findings of Junges et al. [9], while other authors [6,8] reported lower values.

Table 1. Age group.

	Frequency	Percentage	Valid Percentage	Cumulative percentage
Valid ≥ 50	1	3.2	3.2	3.2
20-29	11	35.5	35.5	38.7
30-39	14	45.2	45.2	83.9
40-49	5	16.1	16.1	100.0
Total	31	100.0	100.0	

Table 2. Years of work experience.

	Frequency	Percentage	Valid percentage	Cumulative percentage
Valid ≤ 6	9	29.0	29.0	64.5
7-12	11	35.5	35.5	100.0
> 12	11	35.5	35.5	35.5
Total	31	100.0	100.0	

Regarding the level of education, 16 participants (51.6%) had postgraduate degrees, and 15 (48.4%) undergraduate degrees. Costa et al. [8] and Feldens et al. [6] show that most respondents had a secondary educational level, as these authors primarily used elementary school teachers in their samples.

Among the participants, only 5 (16.1%) had received education on dental trauma (provided by a dentist 12.9% - n=4, medical doctor 3.2% - n=1, or first aid course 3.2% - n=1), while 26 (83.9%) had not. On the other hand, 4 (12.9%) had been called to treat a child with dental trauma, while 27 (87.1%) had not. All participants consider important to receive training on dental trauma. Other authors (9,10) found similar numbers. However, Costa et al. [8], in their 2014 study, found a higher number of participants who had been called to treat children with dental trauma (28.16%), from which 20.39% had received instructions on the subject.

In this study, the average number of professionals working with children was 30, from which 10 with a maximum of 300 children and a minimum of zero - one of the participants did not respond (table 3). Despite the study targeting professionals working with children, 6 of them (19.4%) reported zero experience with this population.

Table 3. Number of children.

n	Valid Omitted
Mode	30
Range	1
Minimum	0
Maximum	300

Table 4 shows the procedure indicated by the participants for sending a tooth fragment to the dentist. Among the participants, 3 (9.7%) did not respond, 20 (64.6%) would send it in a plastic container, tissue, or napkin, and 1 (3.2%) would send it in the child's mouth. Some authors found different results, such as Costa et al. [8], where 17.48% would use napkins and 13.59% would use ice. Other authors show similar results to those found in our research [10].

Table 4. How would you send a tooth fragment to the dentist.

	Frequency	Percentage	Valid percentage	Cumulative percentage
Did not respond	3	9.7	9.7	9.7
In a plastic container	10	32.3	32.3	41.9
In a clean tissue or napkin	10	32.3	32.3	74.2
Valid In any liquid	5	16.1	16.1	90.3
In the child's mouth	1	3.2	3.2	93.5
In ice	2	6.5	6.5	100.0
Total	31	100.0	100.0	

When asked about the first place where they would seek help in case of an accident involving tooth avulsion, 2 participants (6.5%) answered a doctor's office, 11 (35.5%) would seek the school's dental office, 14 (45.2%) a dentist and 4 (12.9%) a hospital, which demonstrates the lack of certainty in the management. Similar results were found by Traebert et al. [12]. If the avulsed tooth is deciduous, 26 professionals (83.9%) think it should not be reimplanted, while 5 (16.1%) think it should. If they are going to put the tooth back in the alveolus and it is dirty, 13 (41.9%) do not know what to do and 3 (9.7%) did not respond. An avulsed and broken permanent tooth would be sent to the dentist by 27

participants (87.1%, while 3 (9.7%) would not know what to do and 1 (3.2%) did not respond. Awk et al. [11] report in their study that only 9 professors felt able to reimplant a tooth in the socket and, of these, only 3 would do it with a deciduous tooth. These numbers were also found by other authors [10,12].

Table 5 refers to tooth avulsion and shows the results of the question "If you used a liquid to rinse and transport the tooth, what did you use?". One participant (3.2%) did not respond, 12 (38.7%) would use tap water and 4 (12.9%) would use antiseptic solution.

Table 5. What kind of liquid would you use to rinse and transport the tooth.

	Frequency	Percentage	Valid percentage	Cumulative percentage
Did not respond	1	3.2	3.2	3.2
Tap water	12	38.7	38.7	41.9
Ice water	7	22.6	22.6	64.5
Válido Milk	1	3.2	3.2	67.7
Antiseptic solution	4	12.9	12.9	80.6
Saline solution	6	19.4	19.4	100.0
Total	31	100.0	100.0	

According to Guedes-Pinto [13], injuries to dental tissues range from simple enamel fractures to complex fractures involving the crown, pulp tissue, and root. In the case of dental crown fractures, transporting the fragment in a moist environment is favorable as it prevents dehydration and facilitates possible bonding. When a tooth is avulsed, preventive programs for immediate replantation are crucial: hold the tooth by the crown, rinse it with running water, reposition it in the socket, keep the mouth closed, and seek immediate dentist care. If it is not possible, the tooth should be kept and transported in a moist environment, preferably in milk at room temperature. Several factors, such as the extra-alveolar period and the storage medium during transportation need to be considered for successful replantation [7,13,14].

It was observed during this study, when asked how they would transport a tooth fragment (table 4), only five participants responded that they would use a liquid medium, which corresponds to the number of professionals who received first aid instructions regarding this situation. However, the majority did not know how to act correctly, highlighting the importance of guidance and health education. Similarly, and more importantly, in Table V, only one participant would use milk as a transport medium in case of an avulsed tooth, which is the most recommended method according to the authors.

CONCLUSION

The responses clearly show that the sample consists predominantly of males, ranging from 20 to 50 years, most of them with over seven years of professional experience, and 51% with postgraduate qualifications, showing consistent professional knowledge and experience.

There is a lack of knowledge among most participants regarding oro dental trauma and the correct and immediate management of such injuries.

Considering that these injuries occur with some frequency in the target population of their daily work, this lack of knowledge can hinder and undermine the work of the dentist and cause irreversible harm to the victims. Furthermore, all participants unanimously agreed that there is a need for guidance on first aid regarding oro dental traumas, specifically targeted at their professional category, which is frequently exposed to this kind of risk.

Collaborators

H Ghersel and ELA Ghersel, project administration, conceptualization, data curation, writing – proofreading and editing, research, methodology, supervision, validation, visualization. AA Ghersel, data curation, writing - first writing, proofreading and editing, research, validation, visualization. BLL Caetano and DS Gurdian, data curation, writing - first writing, proofreading and editing, research, validation, visualization.

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