

**Dental traumatismos: primary health care dentists' knowledge****Traumatismos dentários: conhecimento dos cirurgiões dentistas da atenção básica à saúde****Traumatismos dentales: conocimiento de los cirujanos dentistas de la atención básica a la salud****Received: 28/07/2017****Approved: 17/12/2017****Published: 05/04/2018****Carlus Alberto Oliveira dos Santos<sup>1</sup>****Aparecida Tharlla Leite de Caldas<sup>2</sup>****Ricardo Liberalino Ferreira de Souza<sup>3</sup>****Mafalda Siewes<sup>4</sup>****Margarida Maria Pontes de Carvalho<sup>5</sup>****Fernanda de Araújo Trigueiro Campos<sup>6</sup>**

This research aims to evaluate the knowledge of dental surgeons (DS) in the primary health care of João Pessoa-PB about dental injuries through a questionnaire evaluated by Pedrini in 2008. The sample was made up of 70 DSs, which were classified in 2 groups: G1 (DSs that finished their graduation 25 years ago or less) and G2 (DSs which finished their graduation more than 25 years ago). Pearson's Chi-squared test and/or Fisher's exact test were used in the IBM software SPSS (20.0). The answers of the participants were varied regarding the most common trauma in their practice. The DSs stated not to know how to treat: concussions (52.9%), extrusive luxations (88.7%), lateral luxations (90.0%), intrusive luxations (75.0%), and 75.9% said not to know how to treat any type of injury. Statistically significant differences were found between the time since the participants concluded their graduation courses and the self-perception they have on the types of injury they are capable of treating ( $p>0.05$ ). The evaluated DSs did not show adequate knowledge to deal with dental trauma.

**criptors:** Tooth injury; Public health; Quality of life.

Esta pesquisa tem como objetivo avaliar o conhecimento de Cirurgiões Dentistas (CD) da Atenção Básica à Saúde de João Pessoa - PB sobre traumatismo dentário através de um questionário validado por Pedrini em 2008. A amostra foi composta por 70 CD classificados em 2 grupos: G1 (CDs que concluíram a graduação há um tempo menor ou igual a 25 anos) e G2 (CDs que concluíram a graduação há mais de 25 anos). Aplicou-se os testes Qui-Quadrado de Pearson e/ou o teste Exato de Fischer no software IBM SPSS (20.0). As respostas obtidas foram heterogêneas em relação ao trauma mais prevalente no serviço. Os CD responderam que não sabiam tratar: consusão (52,9%), luxações extrusivas (88,7%), luxações laterais (90,0%), luxações intrusivas (75,0%) e 75,9% responderam não saber tratar todos os tipos de traumatismo. Verificou-se diferença estatisticamente significativa entre o tempo de conclusão do curso de graduação e a autopercepção de que seria capaz de tratar todos os tipos de traumatismos ( $p<0,05$ ). Concluiu-se que os CDs avaliados não apresentam conhecimento satisfatório para tratar os traumatismos dentários.

**Descritores:** Traumatismos dentários; Saúde pública; Qualidade de vida.

Esta investigación tiene como objetivo evaluar el conocimiento de Cirujanos Dentistas (CDs) de la Atención Básica a la salud de João Pessoa - PB (Paraíba) sobre traumatismo dental a través de un cuestionario validado por Pedrini en 2008. La muestra estaba compuesta por 70 CDs clasificados en 2 grupos: G1 (CDs que concluyeron la graduación hace 25 años o menos) y G2 (CDs que concluyeron la graduación hace más de 25 años). Se aplicaron los tests chi-Cuadrado de Pearson y/o test Exacto de Fischer en el software IBM SPSS (20.0). Las respuestas obtenidas fueron heterogéneas en relación al trauma más frecuente en el servicio. Los CDs respondieron que no sabían tratar: concusión (52,9%), luxaciones extrusivas (88,7%), luxaciones laterales (90%), luxaciones intrusivas (75%) y 75,9% respondieron no saber tratar todos los tipos de traumatismo. Se verificó diferencia estadísticamente significativa entre el tiempo de conclusión de la carrera de graduación y la autopercepción de que sería capaz de tratar todos los tipos de traumatismos ( $p<0,05$ ). Se concluye que los CDs evaluados no presentan conocimiento satisfactorio para tratar los traumatismos dentales.

**Descritores:** Traumatismos de los dientes; Salud pública; Calidad de vida.

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## INTRODUCTION

**T**eeth injuries (TI) can be defined as injuries of variable severity, intensity and extension, and can be accidental or intentional. These events become especially worrisome when compared with the main problems that directly or indirectly influence quality of life. As is the case of tooth decay and mouth cancer, tooth injuries are among the most common public health problems in the world<sup>1-3</sup>.

Negligence regarding odontological treatments after TIs can have as a consequence: color alteration, mobility, position changes within the dental arch, pain, sensitivity, root or bone resorption, necrosis and loss of the element. The TI is not a cause of diseases, but it can be responsible for problems which go beyond aesthetics. The damage caused by the varied types of dental injuries involve psychological, functional and social well-being, in addition to generating significant financial cost to the victims<sup>2,3</sup>.

In the case of children, these damages can affect their behavior and school progress, in addition to influencing the quality of life of their parents or caretakers. Children are more susceptible to dental injuries, and the most affected dental elements are the central upper incisors, which is due to the fact that the children are actively involved in outdoor activities, which are very common in the rural areas of Paraíba<sup>4</sup>.

Many factors are associated to the etiology of dental injuries, such as: falls, sport activities, automotive accidents and violence, among anatomic factors that increase the possibility of tooth injuries, among which are overjet and overbite<sup>1-3</sup>.

As this is a public health problem, a multidisciplinary team must take part in the care of children with tooth injuries. Physical educators, teachers, caretakers and community health agents are examples of professionals that in most cases are actively present in the daily life of children<sup>1,3</sup>.

The oral health team of the Family Health Strategy, particularly, is in a special situation, as they have access to the population in their offices, and in the patients' houses, schools and community, which means

they can train family members, teachers and other health professionals to deal with urgent odontological situations<sup>3,5</sup>.

Considering this context, it is relevant for Dental Surgeons to have adequate technical knowledge and continuous studies on the several types of TI, to help improve the quality of life of the population.

This research aims to evaluate the knowledge of dental surgeons (DS) in the primary health care of João Pessoa-PB about dental injuries through a questionnaire evaluated by Pedrini in 2008<sup>6</sup>.

## METHOD

This is an exploratory, quantitative and descriptive study. Data collection took place in the Primary Health Care Units in the city of João Pessoa, Paraíba, with the Dental Surgeons regularly enrolled in the Regional Odontology Council (CRO).

Research started after approval from the Research Ethics Committee of UNIPÊ, under certification CAAE: 50595415.8.0000.5176.

The universe of this study included 180 DSs regularly enrolled in the Regional Odontology Council, Paraíba state session, with any specialty, in any age group, from both genders.

Sample size was defined according to a 95% confidence degree with 5% error, resulting in a sample of 123 Dental Surgeons. After losses were taken into account, only 70 DSs from the 123 sample remained. Losses were justified as follows: the DSs did not want to answer the questionnaire, were on vacation, or on medical leave.

Research took place after participants read and signed the Free and Informed Consent Form. DSs that did not work in the Primary Health Care Units (UBSs) were excluded from the research.

The instrument of data collection was a previously validated questionnaire<sup>6</sup>. This questionnaire also has 9 questions and aims to identify the knowledge of DSs about tooth injuries.

The questionnaires were given to the participants who accepted participating in the research. The questions had only one

alternative as an answer. The most important statement should be selected. The participant had the time he or she deemed necessary to answer the questionnaire, which, at the end, was stored in an envelope, maintaining the anonymity of the participant.

Data were analyzed through descriptive statistics. Absolute and relative frequencies of the answers to the questionnaire were calculated.

Research participants were classified in 2 groups: G1 (DSs that finished their graduation 25 years ago or less) and G2 (DSs which finished their graduation more than 25 years ago). The answers related to their clinical conduct were classified as adequate or inadequate.

An analysis of the proportion differences was conducted (Pearson's chi-squared test and/or Fisher's exact test) to determine eventual differences among the professional groups and the evaluation of conducts instituted for each type of injury. The significance level selected was  $p < 0.05$ . All analysis were conducted through the IBM SPSS version 20.0 and considered a confidence interval of 95%.

## RESULTS

After data analysis, it was found that more than half of researchers (82.9%) were female, above 30 years of age, had graduated 25 years or less before (61.4%), mostly from public federal universities (82.9%), according to Table 1.

Data included in Table 2 indicate which professionals have specialization courses, those who do not, and the area of expertise of the former. It can be noted that most participants (82.9%) have a specialization, the most common ones being Prosthesis (8.9%), Endodontics (7.4%) and Periodontics (5.4%).

Table 3 shows the most common tooth injuries in the services where the participant DSs work.

Table 4 shows the number of correct and incorrect answers from the participant DSs. The great majority of questions had more incorrect answers, except when it comes to subluxation (60.8% right answers). Most participants say not to feel prepared to intervene as a whole (79.5%).

**Table 1.** Professionals, according to their sociodemographic characteristics, year of conclusion of their graduation, and institution where their graduation was concluded. João Pessoa, 2016.

Variables	n	%
<b>Sex</b>		
Female	58	82.9
Male	12	17.1
<b>Age group</b>		
≤ 29 years old	6	8.8
30-39 years old	9	13.2
40-49 years old	12	17.6
50-59 years old	25	36.8
≥ 60 years old	16	23.5
<b>Year graduation was concluded</b>		
≤ 25 years	43	61.4
> 25 years	27	38.6
<b>Institute where graduation took place</b>		
UFPB	58	82.9
UNIPÊ	3	4.3
UEPB	3	4.3
UFRN	1	1.4
FORNE	1	1.4
UNP	1	1.4
UPE	1	1.4
UNB	1	1.4
URNE	1	1.4

**Table 2.** Professionals, according to their specialization, year of conclusion of specialization and reports of working in other areas. João Pessoa, 2016.

Variables	N	%
<b>Do you have a specialization course?</b>		
Yes	58	82.9
No	12	17.1
<b>If so, which one?</b>		
Prosthesis	5	8.9
Endodontics	4	7.1
Periodontics	3	5.4
Prosthodontics	2	3.6
Orthodontics	2	3.6
Cosmetic Dentistry	1	1.8
Surgery	1	1.8
Forensic Dentistry	1	1.8
Pediatric Dentistry	1	1.8
Occupational Odontology	1	1.8
Other	35	62.5
<b>Year the specialization was concluded</b>		
≤ 19 years	5	11.4
> 19 years	37	84.1
Ongoing	2	4.5
<b>In addition to the specialization, work in other areas</b>		
Yes	42	70.0
No	18	30.0
<b>Areas</b>		
General Practitioner	20	36.4
Prosthesis	3	5.5
Cosmetic Dentistry	2	3.6
Periodontics	1	1.8
More than one	29	52.7

**Table 3.** Professionals, according to the reportedly most common injuries in their work, and the evaluation of actions instituted for each type of injury. João Pessoa, 2016.

Variables	N	%
<b>Most common injury in their service</b>		
Avulsão	15	23.4
Lateral luxation	7	10.9
Concussion	3	4.7
Intrusive luxation	3	4.7
Intrusion	3	4.7
Extrusive luxation	3	4.7
Subluxation	2	3.1
More than one	28	43.8
<b>Conduct for Concussions</b>		
Adequate	24	47.1
Inadequate	27	52.9
<b>Conduct for Subluxations</b>		
Adequate	31	60.8
Inadequate	20	39.2
<b>Conduct for Extrusive Luxations</b>		
Adequate	6	11.3
Inadequate	47	88.7
<b>Conduct for Lateral Luxations</b>		
Adequate	5	10.0
Inadequate	45	90.0
<b>Conduct for Intrusive Luxations</b>		
Adequate	13	25.0
Inadequate	39	75.0
<b>Capable of treating the mentioned types of injury</b>		
Yes	8	20.5
No	31	79.5

**Table 4.** Professionals, according to the time since they finished graduation and the evaluation of conducts instituted for each type of injury. João Pessoa, 2016.

Variables	Time since graduation was concluded				Total	p-value
	≤ 25 years		> 25 years			
	N	%	n	%		
<b>Conduct for Concussions</b>						
Adequate	9	34.6	15	60.0	24	47.1
Inadequate	17	65.4	10	40.0	27	52.9
<b>Conduct for Subluxations</b>						
Adequate	15	57.7	16	64.0	31	60.8
Inadequate	11	42.3	9	36.0	20	39.2
<b>Conduct for Extrusive Luxations</b>						
Adequate	3	10.7	3	12.0	6	11.3
Inadequate	25	89.3	22	88.0	47	88.7
<b>Conduct for Lateral Luxations</b>						
Adequate	2	8.0	3	12.0	5	10.0
Inadequate	23	92.0	22	88.0	45	90.0
<b>Conduct for Intrusive Luxations</b>						
Adequate	5	18.5	8	32.0	13	25.0
Inadequate	22	81.5	17	68.0	39	75.0
<b>Would you be able to treat all types of injury mentioned?</b>						
Yes	1	5.0	7	36.8	8	20.5
No	19	95.0	12	63.2	31	79.5

\* Pearson's chi-squared test; \*\* Fisher's exact test.

## DISCUSSION

In this study, most participants were female, according to the results described above, corroborating a previous study<sup>1</sup> that evaluated the impact of tooth injuries in the quality of life of children and adolescents.

In a research<sup>4</sup> conducted with Dental Surgeons regarding the emergency treatment of patients with dental avulsion in Alfenas-MG, it was found that 58.3% participants were male, 8.3% had from 51 to 60 years of age, 11.1% had been graduated for up to 30 years and 38.9%.

In this study, most participants stated to have some specialization (82.9%), and most of these (84.1%) finished their specializations more than 19 years ago. Azevedo<sup>9</sup> found similar results in a study, in which 56% of the 182 professionals had some type of specialization. Another study<sup>4</sup> found that from the 72 researched professionals (86.1%) had a post-graduation course.

The results of this work diverge from those from another investigation<sup>7</sup>, in which pulp necrosis was reported as the most commonly found sequela, developing in the first year after the trauma. Pulp calcification was mentioned as the most common sequela found after root fractures. Ankylosis and root

resorption through substitution were found after avulsions.

It is necessary to know that the reported sequelae may appear after trauma, so that the Dental Surgeon is able to recognize the symptoms and the clinical and radiographic signals, establishing a prognosis and tracing a treatment plan.

In this study, the answers were found to be heterogeneous in regards to the most common injury in the workplace of these professionals. Considering the conducts adopted regarding different types of trauma, most professionals did not know which are the most adequate ways to treat concussions, as well as extrusive, lateral, and intrusive luxations.

When asked whether they would be capable of treating all the types of injury presented, most participants said they would not. Similarly, in another study<sup>6</sup>, 74.8% from 469 professionals had inadequate conducts to treat subluxation. 95.3% regarding extrusive luxations and 88.9% in lateral luxations. Regarding the conducts to treat concussions, the results of this study are different than those found by Pedrini<sup>6</sup>, according to which 26.5% of professionals had adequate conduct.

Another similar research<sup>8</sup> had different results from those of this study when it

reported that the records of 129 patients with alveolar injuries were analyzed, with varying adopted conducts. This result came from the analysis of 44 cases (34.1%) referred to a project of the Federal University of Maringá, which allows for a centralization of clinical care for patients who suffered tooth injuries.

In this research, 79.5% of professionals reported that they would not be able to treat all types of injuries presented. The adequate management of alveolar injuries includes a correct initial diagnosis, immediate urgent treatments if necessary, definitive treatments, and the preservation of the case<sup>2</sup>.

According to this study, the more time passed from graduation, the higher the reported ability of dealing with all types of injury. These findings are different than those found by Pedrini<sup>6</sup>, who, in a study with 469 professionals, found that Dental Surgeons more recently graduated were able to elaborate a higher number of adequate plans, especially for the treatment of concussions, which is probably a result of a more recent approach to the issue.

Different results from those in the present study were reported by another work<sup>5</sup>, conducted in the Family Health Program of Campina Grande/PB, in 2009. In it, professionals were in a special situation, as they had access to the population in their offices, and in the patients' houses, schools and community, as to train family members, teachers and other health professionals to deal with urgent odontological situations.

It is paramount for Dental Surgeons to have adequate technical knowledge and continuous training about the subject at hand, contributing to improve the quality of life of the population.

## CONCLUSION

Considering the results of this study, it is possible to conclude that Dental Surgeons do not have enough knowledge to adequately treat tooth injuries.

Additionally, their knowledge regarding tooth injuries diminishes as the time since their graduation increases.

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#### CONTRIBUTIONS

**Carlus Alberto Oliveira Santos and Aparecida Tharlla Leite Caldas** conducted data interpretation and performed the writing of the article. **Mafalda Siewe** took part in the conception, design, analysis and interpretation of data. **Ricardo Liberalino Ferreira de Souza, Fernanda de Araújo Trigueiro Campos and Margarida Maria Pontes de Carvalho** took part in the conception, design, analysis and interpretation of data, as well as in a critical review of the text.

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