MÁRCIA PEREIRA SIMÕES

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RETROSPECTIVE ANALYSIS IN FORENSIC DENTAL REPORTS

VIOLÊNCIA INTERPESSOAL URBANA E TRAUMA BUCO-MAXILO-FACIAL:

ANÁLISE RETROSPECTIVA EM RELATÓRIOS ODONTOLÓGICOS DE CORPO DE DELITO

PIRACICABA
2015

UNIVERSIDADE ESTADUAL DE CAMPINAS
FACULDADE DE ODONTOLOGIA DE PIRACICABA

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Dissertation presented to the Piracicaba Dental School of the State University of Campinas in partial fulfillment of the requirements for the degree of Master in Dental Biology, in Forensic Dentistry and Ethics area.

Dissertação apresentada à Faculdade de Odontologia de Piracicaba da Universidade Estadual de Campinas como parte dos requisitos para obtenção do título de Mestra em Biologia Buco-Dental, na área de Odontologia Legal e Deontologia.

Orientador: Prof. Dr Eduardo Daruge Junior.

Este exemplar corresponde à versão final da dissertação defendida por Márcia Pereira Simões e orientada pelo Prof. Dr. Eduardo Daruge Junior.

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ABSTRACT

The urban interpersonal violence represents a serious challenge for public authorities and managers. This study aimed to investigate the oral maxillofacial trauma caused by interpersonal violence regarding its epidemiologic and criminal implication aspects, as well as to evaluate the importance of clinical documentation in forensic exams. A retrospective observational study has been conducted involving 1,048 forensic dental reports generated in the years 2012 and 2013 in the city of Rio de Janeiro, RJ, Brazil. Interpersonal violence was the cause of oral maxillofacial trauma in 405 (38.6%) exams, involving mainly young, white and unmarried men. The most common harmful agent was the punch. The soft tissues were most injured, being bruise the predominant injury. The more fractured bones were maxilla and mandible. Anterior teeth showed a higher incidence of crown fractures. Regarding criminal classification, light body damage predominated and teeth-only injuries implied light, severe and very severe damage. There was presentation of clinical documentation in 132 (32.6%) forensic exams. It was found that the oral maxillofacial trauma due to interpersonal violence has reached alarming levels in both years of study, being the clinical documentation an important mean of obtaining evidence, particularly in indirect forensic examination. It is suggested to carry out epidemiological studies covering other regions of the State of Rio de Janeiro and the country for more detailed analysis of the phenomenon, as well as the participation of the dentist as an effective forensic team member.

Key Words: documentation, forensic dentistry, trauma, violence.

RESUMO

A violência interpessoal urbana representa um sério desafio para autoridades e gestores públicos. Este estudo investigou o trauma buco-maxilo-facial decorrente de violência interpessoal quanto à epidemiologia e implicações criminais, bem como avaliou a importância da documentação clínica nos exames de corpo de delito. Foi realizado estudo observacional retrospectivo envolvendo 1.048 relatórios odontológicos de corpo de delito gerados nos anos de 2012 e 2013, na cidade do Rio de Janeiro, RJ, Brasil. Violência interpessoal foi causa de trauma buco-maxilo-facial em 405 (38,6%) exames, envolvendo principalmente homens jovens, brancos e solteiros. O agente lesivo mais comum foi o soco. Os tecidos moles foram os mais lesionados, sendo a equimose a lesão prevalente. Os ossos mais fraturados foram maxila e mandíbula. Os dentes anteriores mostraram maior incidência de fraturas coronárias. Quanto à classificação penal, predominou o dano corporal leve, sendo que as lesões somente aos dentes implicaram dano leve, grave e gravíssimo. Houve apresentação de documentação clínica em 132 (32,6%) exames periciais. O trauma buco-maxilo-facial decorrente de violência interpessoal alcançou níveis preocupantes nos dois anos do estudo, representando a documentação clínica importante meio de prova particularmente nos exames de corpo de delito indireto. Sugere-se a realização de estudos epidemiológicos periódicos, que abranjam as demais regiões do Estado do Rio de Janeiro e do país para análise mais completa do fenômeno, bem como a participação do cirurgião-dentista como membro efetivo das equipes forenses.

Palavras-Chave: documentação, Odontologia Legal, trauma, violência.

SUMÁRIO

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Dedico este trabalho aos meus pais Fernando Simões e Cléa Pereira Simões pelos exemplos de honestidade, esforço pessoal e compaixão pelo próximo.

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“Para que o mal triunfe, basta que os homens de bem permaneçam inertes.”

Edmund Burke

INTRODUÇÃO

O dia-a-dia nos centros urbanos apresenta inúmeras dificuldades, representando a violência interpessoal um sério desafio enfrentado pelas autoridades e gestores públicos.

De acordo com Souza e Lima (2007), fatores importantes como o aumento da população, desemprego, desestruturação familiar, desejo exacerbado de consumo e desigualdade na distribuição da renda tornam-se mais intensos nas grandes cidades, contribuindo para a crescente onda de violência. Por sua vez, Eggesperger et al. (2007) destacam ainda o consumo abusivo de substâncias ilícitas e de bebidas alcoólicas como outro fator relevante no agravamento das condutas violentas.

Em face desse complexo panorama social, os traumatismos são uma consequência frequente, que culmina na sobrecarga do sistema público de saúde, assim como no aumento dos exames de corpo de delito de lesão corporal nos Institutos Médico-Legais, onde a Odontologia Legal exerce papel de destaque na avaliação dos danos ao complexo buco-maxilo-facial à luz da legislação criminal.

Vale mencionar que o crime de lesão corporal encontra-se tipificado no Artigo 129 do Código Penal Brasileiro, que classifica as lesões corporais de acordo com o resultado em leves, inseridas no *caput* ou cabeça do artigo, sendo que as consequências das lesões graves e gravíssimas estão elencadas nos parágrafos 1º e 2º (Delmanto et al., 2002).

Portanto, os relatórios periciais devem ser considerados como fontes importantes de informação epidemiológica à semelhança da documentação clínica proveniente de serviços emergenciais e de atenção à saúde (Garbin et al., 2012).

Cabe enfatizar inclusive que a documentação clínica é de grande utilidade nas avaliações periciais particularmente quando o perito necessita de informações relativas aos cuidados iniciais prestados à vítima.

A literatura científica tem abordado exaustivamente o trauma buco-maxilo-facial no que tange à etiologia, terapêutica e prevenção, mas poucos estudos (Chiaperini et al., 2009; Klopfstein et al., 2010; Caldas et al., 2010; Pires et al., 2012) o correlacionam especificamente com violência interpessoal nas áreas urbanas e suas consequências na esfera criminal. Além disso, verifica-se que o papel da documentação clínica nos exames

de corpo de delito não é enfatizado com a frequência recomendável, o que foi feito apenas por klopfstein et al. (2010).

Diante disso, este estudo investigou o trauma buco-maxilo-facial decorrente de violência interpessoal na cidade do Rio de Janeiro, no período de 1º de janeiro de 2012 a 31 de dezembro de 2013, quanto a sua epidemiologia e implicações criminais**,** bem como, avaliou a importância da documentação clínica proveniente da rede de saúde pública e particular nos exames periciais.

CAPÍTULO 1: Urban interpersonal violence and oral maxillofacial trauma: retrospective analysis in forensic dental reports

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URBAN INTERPERSONAL VIOLENCE AND ORAL MAXILLOFACIAL TRAUMA: RETROSPECTIVE ANALYSIS IN FORENSIC DENTAL REPORTS

SUMMARY – The urban interpersonal violence represents a serious challenge for public authorities and managers. This study aimed to investigate the oral maxillofacial trauma caused by interpersonal violence regarding its epidemiologic and criminal implication aspects, as well as to evaluate the importance of clinical documentation in forensic exams. A retrospective observational study has been conducted involving 1,048 forensic dental reports generated in the years 2012 and 2013 in the city of Rio de Janeiro, RJ, Brazil. Interpersonal violence was the cause of oral maxillofacial trauma in 405 (38.6%) exams, involving mainly young, white and unmarried men. The most common harmful agent was

the punch. The soft tissues were most injured, being bruise the predominant injury. The more fractured bones were maxilla and mandible. Anterior teeth showed a higher incidence of crown fractures. Regarding criminal classification, light body damage predominated and teeth-only injuries implied light, severe and very severe damage. There was presentation of clinical documentation in 132 (32.6%) forensic exams. It was found that the oral maxillofacial trauma due to interpersonal violence has reached alarming levels in both years of study, being the clinical documentation an important mean of obtaining evidence, particularly in indirect forensic examination. It is suggested to carry out epidemiological studies covering other regions of the State of Rio de Janeiro and the country for more detailed analysis of the phenomenon, as well as the participation of the dentist as an effective forensic team member.

Key Words: documentation, forensic dentistry, trauma, violence.

INTRODUCTION

Daily life in urban centers presents several difficulties, being interpersonal violence a serious challenge faced by the authorities and public managers.

Important factors such as population growth, unemployment, family breakdown, exacerbated consumption desire and inequality in income distribution become more intense in big cities, contributing to the rising tide of violence (1). Studies also highlight the abuse of illegal substances and alcohol as another relevant factor in exacerbating violent conduct (2-6).

Due to this complex social context, trauma is a frequent consequence culminating in overload of the public health system, as well as increase in the number of forensic exams in Medical-legal Institutes, where Forensic Dentistry plays a decisive role in the oral maxillofacial complex damage evaluation regarding criminal law.

Therefore, the forensic reports should be considered as important sources of epidemiological information, similarly to the clinical documentation from emergency and health care services (7).

It should be even emphasized that clinical documentation is of great utility in forensic evaluation, particularly when the expert needs information about the initial care provided to the victim.

Scientific literature has extensively discussed the oral maxillofacial trauma in relation to etiology, treatment and prevention, but few studies correlated it specifically to interpersonal violence in urban areas and its consequences in the criminal sphere (4,8-10). Furthermore, it was verified that the role of clinical documentation in forensic exams is not emphasized with the recommended frequency, which was done only by Klopfstein et al. (4).

Therefore, this study investigated the oral maxillofacial trauma resulting from interpersonal violence in the city of Rio de Janeiro, Rio de Janeiro State, Brazil, in the period between the 1th of January of 2012 to the 31th of December of 2013, in relation to its epidemiology and criminal implications, as well as evaluated the importance of clinical documentation from the public and private health care network on forensic exams.

MATERIAL AND METHODS

This retrospective observational study was approved on the 11$^{th\ of}$ June of 2014 by the Ethics Committee of the Dental School of Piracicaba/UNICAMP, São Paulo State, Brazil. Protocol number: 037/2014. Project number (CAAE): 30964914.6.0000.5418.

The Afrânio Peixoto Medical-legal Institute is located in the city of Rio de Janeiro, Rio de Janeiro State, Brazil, being the remaining state areas served by nineteen ROSTPs (Regional Offices of Scientific and Technical Police).

A total of 1,048 forensic reports of oral-maxillofacial trauma victims made in the Forensic Dentistry Sector, from the 1th of January of 2012 to the 31th of December of 2013, in the city of Rio de Janeiro, were included. The forensic dental reports of the ROSTPs did not integrate the study.

From the total number of exams, data concerning the amount of exams involving interpersonal violence and other etiologies, number of exams without causal nexus (cause and effect relation) and number of exams depending on the routing of clinical

documentation to determine the causal nexus, maintaining the respective correlation between dates of injury occurrence and expert exam in relation to month and year, were collected.

From the exams related to interpersonal violence, data on sex; age; skin color; marital status; harmful agent; month of the exam; incidence of injuries in relation to soft tissues, teeth, bones and TMJ (temporomandibular joint); criminal classification of injuries in terms of result and number of exams with clinical documentation submitted to the expert were collected.

According to the Article number 129 of the Brazilian Criminal Code (11), which typifies the crime of bodily injury ("To offend the body integrity or health of others"), the bodily injury can be light or qualified, including the latter three types: severe (§1), very severe (§2) and followed by death (§3). Light injuries are those that do not result in the qualified forms of §§ 1, 2 and 3. Severe injuries are listed in paragraph 1 ("incapacity to usual activities, for more than thirty days; life threatening; permanent debility of limb, sense or function and acceleration of childbirth") and very severe injuries in paragraph 2 ("permanent incapacity for work; incurable illness; loss or uselessness of limb, sense or function; permanent deformity and abortion"). The very severe injury is not expressly mentioned in this article, but it is traditional in doctrine and jurisprudence. The injury followed by death does not fit the purposes of this study. Not all forms of injury qualified in §§ 1 and 2 are directed to the competence area of the forensic dental expert.

In turn, the clinical documentation submitted to expert examination involved reports issued by health centers, health care bulletins of the public and the private hospital network, as well as statements, reports and supplementary exams obtained from clinics and private practices.

Forensic dental reports were considered even when partially incomplete.

The data descriptive statistical analysis was performed with the Statistical Package for Social Sciences Softwares, version 20 for Windows and Microsoft Excel 2010. Being a study with qualitative variables, these were characterized by absolute and relative frequencies in percentage. The Chi-Square independence test was used to compare

frequencies between the years of 2012 and 2013. A significance level of 5% was considered for taking decisions regarding the results of statistical tests.

RESULTS

General considerations

Over the years of 2012 and 2013, 1,048 exams were performed: 523 (49.9%) in 2012 and 525 (50.1%) in 2013. From the total number of exams performed, 420 (40.1%) involved accidents (traffic accidents and other no intentional events), 405 (38.6%) involved interpersonal violence, in 147 (14.0%) there was no confirmation of causal nexus, 67 (6.4%) remained dependent on the routing of clinical documentation to determine the causal nexus. Regarding the last 67 exams, in 22 (59.5%) with allegation of accident and in 11 (36.7%) with allegation of violence, the date of the injury occurrence and the date of the expert exam were different.

Significant differences ($p < 0.001$) were observed between 2012 and 2013. The number of exams involving accidents increased from 186 (35.6%) in 2012 to 234 (44.6%) in 2013, occurring the opposite when regarding interpersonal violence, with a decrease from 209 (40.0%) in 2012 to 196 (37.3%) in 2013, and the exams depending on the routing of clinical documentation to determine the causal nexus, which fell sharply: from 48 (9.2%) exams in 2012 to 19 (3.6%) in 2013. The number of exams without causal nexus remained stable in both years. Because of not integrating the criteria of this study, 09 cases (0.86%) were excluded, remaining 1,039 cases in the rest of the analysis.

Interpersonal violence epidemiology

From the total number of exams involving interpersonal violence (N = 405), the victims were mainly men, aged between 21-30 years old, white and single. Regarding marital status, the conditions of companion (stable relationship) and married, as well as divorced and separated were considered equivalent (Table 1).

The most common harmful agent during the study period was represented by body parts in 352 (86.9%) exams. Considering the harmful agent individually, the punch

occurred in 295 exams, followed by kick in 68, slap in 19, header in 12 and other agents in 36 of them.

In the total study period, the highest incidence of exams occurred in March (44), June (45) and October (41).

Regarding oral maxillofacial trauma, there were soft tissue injuries in 321 (79.3%) exams, dental injuries in 258 (63.7%), bone injuries in 30 (7.4%) and TMJ disorders in 31 (7.7%), being that, in this structure, these disorders were limited to damage to the mandible movements. No significant differences were observed between 2012 and 2013 in any of the injury types.

The most frequent injuries in the soft tissues were ecchymosis, abrasion and traumatic edema, being the oral mucosa and the region of lips the most damaged (Table 2). The crown fracture and luxation were the most frequent injuries in the teeth. The superior anterior teeth were the most affected by trauma, followed by the inferior anterior teeth. In the deciduous dentition, injuries only occurred in anterior teeth (Table 3). Fracture was the most frequent bone injury and maxilla and mandible were the most affected bones (Table 4).

Criminal classification of injuries in terms of result

In both years of the study, 56.8% of the exams resulted in light damage (L), 7.4% in incapacity to usual activities for more than 30 days (30), 29.4% in permanent debility of masticatory function (DB) and 19.5% in permanent deformity (DF). For light damage, it is understood that injuries have left no sequels or that they were minor. In the case of incapacity to usual activities for more than thirty days (severe), the victim remained unable to perform usual activities after the expiry of this period. In turn, the permanent debility of the masticatory function (severe) implied reduction of the functional capacity and the permanent deformity (very severe) meant severe and vexatious esthetic damage (11). Significant differences were observed between 2012 and 2013 in the percentages of permanent debility of masticatory function, increasing from 23.4% in 2012 to 35.7% in 2013 ($p < 0.05$), and permanent deformity, increasing from 15.8 % in 2012 to 23.5% in 2013 ($p < 0.05$). Of the 64 exams only with dental injuries, 53.1% resulted in light damage,

12.5% in incapacity to usual activities for more than thirty days, 45.3% in permanent debility of the masticatory function and 29.7% in permanent deformity. The injuries only to soft tissues, bones and TMJ resulted exclusively in light damage (Table 5).

Clinical documentation

Considering the total number of exams involving interpersonal violence, there was the presentation of clinical documentation in 132 (32.6%) exams in the total period of the study, 70 (33.5%) in 2012 and 62 (31.6%) in 2013.

DISCUSSION

Brazil is a country of continental dimensions and, therefore, presents a marked socioeconomic, cultural, ethnic and religious diversity.

Once that the oral maxillofacial trauma results from the association of various sociodemographic variables, it becomes essential to know them in depth, justifying the performance of periodic epidemiological studies involving the several regions of the country.

This study showed that the number of exams involving interpersonal violence, although slightly below, nearly matched the one involving accidents in the years of 2012 and 2013 in the city of Rio de Janeiro. However, it is worthy to highlight that even some limitations of the study allow to infer the possibility that the amount of cases involving interpersonal violence has, in reality, overcome the one involving accidents, usually higher in developing countries.

One of these limitations refers to the usual underreporting of police cases especially involving domestic violence. Underreporting persists because the violence perpetrated by family members and caregivers remains hidden within households. Regarding the victims, feelings of fear, helplessness, financial and/or emotional dependence are common reasons to the lack of mistreatment report to the competent authorities (12). The other possibility is that the Medical-legal Clinic, responsible for the initial examination of the victims, has not requested a review of some cases by the Forensic Dentistry Sector.

In analogous manner to various studies, it was found that men were involved in more violent episodes than women, presumably due to the larger male participation in the labor force and their higher exposure to risk (1-3,6,8,13-20). However, due to changing mores, with women having a greater participation in the labor market and other external activities, the number of female victims of oral maxillofacial trauma resulting from violent acts has approached the one concerning men.

The first age group of highest incidence was from 21 to 30 years old, which is consistent with most studies (2,3,5,6,9,10,12-18,21) and refers to the stage of life in which individuals more engage in sport activities, fights, industrial accidents and dangerous driving of vehicles (14). However, other studies have shown that victims of violence tend to stand at later age group, from 31 to 40 years old, corresponding to the second group with the highest incidence in the present study (4,7). Rezende et al. (23) found equivalence between the ranges from 20 to 29 and from 30 to 39 years old.

Regarding children and adolescents (≥ 20 years), usually, cases involving accidental falls are replaced by physical attacks along the increasing of age (9,19,20).

Particularly to the elderly (≥ 60 years), low incidence of trauma (4%) caused by violence was found. In this period of life, accidental falls are identified as the most common cause because of the greater difficulty of locomotion by neurological disease, joint and other disorders associated to age (22), but one cannot forget the possibility of mistreatment underreporting.

Considering the skin color of the victims, the majority consisted of white people, which is consistent with the results of some studies (9,10,23). Conversely, Souza and Lima (1) pointed out that the black population in Brazil, represented especially by poorer young men from a cultural and economic standpoint, is the main target of violence resulting in death.

It is important to emphasize that the determination of skin color by the individual himself or by the one who takes the notes can be somewhat subjective, especially when considering the thin line between whites and browns, as well as between browns and blacks. Furthermore, the skin color was recorded only on 231 forensic reports and there were no data on the socioeconomic status of the subjects, so the results achieved

in this study may not accurately portray the characteristics of the population group most prone to interpersonal violence.

Regarding marital status, unmarried individuals predominated, which is consistent with a study by Pires et al. (9) Chiaperini et al. (10) and Rezende et al. (23), probably because they seek for companionship and fun in public places and nightclubs, making them more susceptible to crowds of people and violent attitudes. However, other studies have found that married women are the greatest victims of maxillofacial trauma caused by domestic violence (4,21).

The highest incidence of exams in March, June and October did not coincide with the seasons, holidays or periods of events with high concentration of people, which showed a random pattern in both years of the study. Similarly, Chrcanovic et al. (16) found no significant differences in the incidence of facial fractures among the seasons, explaining that they are not well defined in Brazil, except for a small region in the south of the country. In the case of countries with well-defined seasons, Eggensperger et al. (3) found more cases involving assaults with maxillofacial fractures in the months of July and October corresponding to the holiday period and attributed them to increased consumption of alcohol and drugs. O'Meara et al. (5) found a higher incidence of facial fractures due to contact sports, such as rugby and Australian football, extensively practiced during the winter months.

Trauma resulted primarily from naked aggression, that is, without the use of any instrument, and the punch was the primary harmful agent, indicating common passional motivation of the aggressor, which was corroborated by the findings of several studies (3,4,6-10,21,23).

It is worthy to note that the oral maxillofacial trauma produces serious socioeconomic consequences, because besides the functional damage, it can lead to emotional and/or psychological disorders. It turns out that even not very extensive facial injuries can also cause significant psychological changes, since the perception of each individual to his/her own appearance has subjective character (24).

Therefore, it isn´t rare for victims of trauma to develop depression, anxiety, post-traumatic stress, low self-esteem and tendency to isolation with difficulty to return to

daily activities, which causes reduction of work capacity, as well as high unemployment levels (5,8).

In this study, it was found that the soft tissues were more traumatized (79.3%), in agreement with most studies (2,6,8-10,17,19,21,23) and, among them, the most affected were the oral mucosa and the lip area. Caldas et al. (8) indicated the lips, the gums, the oral mucosa and the extra-oral soft tissues as the most affected; Chalya et al. (14), the extra-oral soft tissues; Cavalcanti (19), the lips and the mucosa and Chiaperini et al. (10), the oral region followed by the nasal region.

Ecchymosis was the most common injury inflicted to soft tissues. Other studies have indicated contusion (14,17,21), laceration (6,23), edema (2), abrasion (10,19) and luxation (9).

Dental injuries occurred in 63.7% of the exams, with the crown fracture prevailing in more than half of the exams with dental trauma, which is in agreement with some studies (7-10,17,20,23), but only one of them pointed out tooth avulsion (18). The anterior permanent teeth of the maxilla were the most affected by direct trauma, followed by the ones of the lower jaw, which was demonstrated in studies about dental trauma (7,18,20).

Most of the bone injuries consisted of fractures and the most affected bones were the maxilla and mandible, similarly to some studies (2,12,15,18,21,22). However other studies have indicated the mandible and the zygomatic (3,5,6,13,17). In turn, Chalya et al. (14) indicated the mandible, maxilla and nasal bone. The low incidence of bone lesions found in the current study was also observed by Klopfstein et al. (4), Chiaperini et al. (10) and Rezende et al. (23).

There also was a low incidence of TMJ disorders (7.7%). A possible explanation is that the injuries only to the articular soft tissues leave few signs on conventional radiographs, being the arthroscopy exam and, particularly, the magnetic resonance imaging, for detecting damage to both bone and soft tissues, essential to the correct diagnosis (25). However, not all Medical-legal Institutes have such technical resources.

The courts are full of cases aimed at determining the criminal responsibility of the perpetrators of bodily injury and it is important to clarify that the knowledge of the authors of the crime does not exclude the need to perform the forensic examination, which aim is to determine the existence of causal nexus and the severity of the damage. This exam must be performed immediately to avoid that the traces of the infraction disappear.

Thus, after the crime news and the registration of the occurrence in the police stations, those who have proven or suspected injuries are referred to forensic examination. The initial evaluation is usually performed by the forensic medical expert that, verifying the need for specialized assessment of competence in the field of Dentistry, directs them to the forensic dental expert. It is important to mention that not all Medical-legal Institutes of the country have this professional as an effective member of their team, which can damage the evaluation, particularly of dental trauma.

Study on dental injuries resulting from domestic violence found that some reports conducted by forensic medical experts did not specify the teeth that were traumatized, or reported damage to the teeth even when it had been reported by the victim (7).

Another difficulty is related to emergency hospital care. There is a trend to omit dental trauma in the medical records when there is no condition or indication for immediate intervention, which occurs mainly in cases of patients with multiple injuries.

As seen in some other studies, the oral maxillofacial trauma mostly configured light damage and reached particularly the soft tissues (5,9,10).

However, injuries involving only teeth caused light as much as severe and very severe damage. It is worthy to note that the anterior teeth, with high esthetic value, were the most affected by trauma, resulting not only in functional deficit, but also in severe esthetic damage, which is harmful to daily life due to the natural constraint of the victim in relation to talking and smiling. Thus, one sees clearly that the care provided to these victims requires integrated participation of professionals from health and social care areas, as well as the indispensable legal support. A study in Portugal found that dental trauma often resulted in permanent damage (8).

It is necessary to make clear that the very low amount of forensic reports describing trauma only to bones and TMJ, and indicating light damage, makes clear that bone and articular injuries do not occur in an isolated form, which suggests that in these cases the forensic dental expert has examined only such structures despite of the existence of injuries in other tissues. Thus, the results obtained in this study were not elucidator as to the severity of the damage caused only to bones and TMJ (Table 5).

Concerning forensic evaluation, the proper record of clinical condition of the patient and procedures performed by dentists and other professionals from the health area offers invaluable subsidies, because it allows the expert to have a more complete view of the cases, confirming information or clarifying doubts. In this study, the clinical documentation display during the expert exam occurred in 132 (32.6%) exams, being considered a significant result.

It is also worthy to note that clinical documentation is essential especially in the indirect forensic examination, in which the absence or exiguity of trauma traces does not allow the expert to assess the damage directly, being necessary to base his analysis and conclusions on information recorded by professionals of the public and private health network during the initial clinical care of the patient.

This situation is common in cases in which there is a considerable time gap between the date of the injury occurrence (trauma) suffered by the victim and the date of the expert exam. It is important to remember that 67 (6.4%) exams remained depending on the routing of clinical documentation to determine the causal nexus, being the dates of the injury occurrence and expert exam different in 36.7% with allegation on interpersonal violence. Besides that, clinical documentation is vital in those cases in which occurred modification of appearance and evolution of the lesions due to treatment performed before the expert exam. It is important to note that any delay in the delivery of this documentation may result in prescription of the crime of bodily injury.

A study on domestic violence against women stressed that the clinical documentation was not significant from the forensic point of view, once that most records did not determine the nature of the event (accident or violence), "age" or development stage, dimensions and shape of the lesions (4). This research pointed out that the expert,

once consulting clinical documentation, should be able to present evidence even without examining the victim. Therefore, it is fundamental that health professionals respect the ethical and legal principles concerning the elaboration and custody of clinical documentation, being also necessary that universities make their students aware of the importance and seriousness of the subject.

According to the current study, it may be concluded that the oral maxillofacial trauma due to interpersonal violence has reached so worrisome levels as those due to accidents in the years of 2012 and 2013, in the city of Rio de Janeiro, and affected mainly young single white men, having the punch as the most common harmful agent. Although light damage has predominated, injuries only to teeth resulted also in severe and very severe damage. Furthermore, it was found that clinical documentation consists in important evidence particularly in indirect forensic examination, being fundamental that health professionals respect the ethical and legal principles concerning its elaboration and custody. It is suggested to carry out epidemiological studies covering other regions of the State of Rio de Janeiro and of the country for more detailed analysis of the phenomenon and the development of public policy on health and safety, as well as the participation of the dentist as an effective forensic team member.

RESUMO – A violência interpessoal urbana representa um sério desafio para autoridades e gestores públicos. Este estudo investigou o trauma buco-maxilo-facial decorrente de violência interpessoal quanto à epidemiologia e implicações criminais, bem como avaliou a importância da documentação clínica nos exames de corpo de delito. Foi realizado estudo observacional retrospectivo envolvendo 1.048 relatórios odontológicos de corpo de delito gerados nos anos de 2012 e 2013, na cidade do Rio de Janeiro, RJ, Brasil. Violência interpessoal foi causa de trauma buco-maxilo-facial em 405 (38,6%) exames, envolvendo principalmente homens jovens, brancos e solteiros. O agente lesivo mais comum foi o soco. Os tecidos moles foram os mais lesionados, sendo a equimose a lesão prevalente. Os ossos mais fraturados foram maxila e mandíbula. Os dentes anteriores mostraram maior incidência de fraturas coronárias. Quanto à classificação penal, predominou o dano corporal leve, sendo que as lesões somente aos dentes implicaram dano leve, grave e gravíssimo.

Houve apresentação de documentação clínica em 132 (32,6%) exames periciais. O trauma buco-maxilo-facial decorrente de violência interpessoal alcançou níveis preocupantes nos dois anos do estudo, representando a documentação clínica importante meio de prova particularmente nos exames de corpo de delito indireto. Sugere-se a realização de estudos epidemiológicos periódicos, que abranjam as demais regiões do Estado do Rio de Janeiro e do país para análise mais completa do fenômeno, bem como a participação do cirurgião-dentista como membro efetivo das equipes forenses.

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Table 1. Exams involving interpersonal violence in 2012, 2013 and total, in relation to sociodemographic variables.

Variable	2012	2013	Total	*p*
Sex (N = 402)				
Female	99 (47.6%)	75 (38.7%)	174 (43.3%)	0.071
Male	109 (52.4%)	119 (61.3%)	228 (56.7%)	
Age (N = 400)				
Minor or equal to 20 years old	32 (15.4%)	30 (15.6%)	62 (15.5%)	
21 to 30	65 (31.3%)	59 (30.7%)	124 (31.0%)	
31 to 40	50 (24.0%)	43 (22.4%)	93 (23.3%)	0.886
41 to 50	32 (15.4%)	38 (19.8%)	70 (17.5%)	
51 to 60	20 (9,6%)	15 (7,8%)	35 (8,8%)	
Major or equal to 61 years old	9 (4,3%)	7 (3,6%)	16 (4,0%)	
Skin Color **(**N=231)				
White	84 (58.3%)	54 (62.1%)	138 (59.7%)	
Brown	39 (27.1%)	16 (18.4%)	55 (23.8%)	0.265
Blak	21 (14.6%)	17 (19.5%)	38 (16.5%)	
Marital Status (N = 364)				
Married/Companion	45 (22.8%)	31 (18.6%)	76 (20.9%)	
Divorced/Separated	11 (5.6%)	8 (4.8%)	19 (5.2%)	
Single	137 (69.5%)	125 (74.9%)	262 (72.0%)	0.734
Widow(er)	4 (2.0%)	3 (1.8%)	7 (1.9%)	

p - significance value of the Chi-Square Test.

Table 2. Most frequent injuries in soft tissues and soft tissues most affected in the exams involving interpersonal violence in 2012, 2013 and total.

All injuries	2012 (n = 168)	2013 (n =153)	Total (N = 321)
Most frequent injuries			
Ecchymosis	103 (61.3%)	94 (61.4%)	197 (61.4%)
Abrasion	64 (38.1%)	74 (48.4%)	138 (43.0%)
Edema	70 (41.7%)	62 (40.5%)	132 (41.1%)
Wound	52 (31.0%)	51 (33.3%)	103 (32.1%)
Ulcer	18 (10.7%)	23 (15.0%)	41 (12.8%)
Hematoma	2 (1.2%)	3 (2.0%)	5 (1.6%)
Erythema	1 (0.6%)	0 (0.0%)	1 (0.3%)
Soft tissues: most affected areas			
Oral mucosa	125 (74.4%)	115 (75.2%)	240 (74.8%)
Labial	86 (51.2%)	68 (44.4%)	154 (48.0%)
Orbital	28 (16.7%)	28 (18.3%)	56 (17.4%)
Chin	21 (12.5%)	17 (11.1%)	38 (11.8%)
Nasal	21 (12.5%)	17 (11.1%)	38 (11.8%)
Mandible	18 (10.7%)	11 (7.2%)	29 (9.0%)
Frontal	15 (8.9%)	14 (9.2%)	29 (9.0%)
Zygomatic	13 (7.7%)	14 (9.2%)	27 (8.4%)
Cheeks	11 (6.5%)	8 (5.2%)	19 (5.9%)
Tongue	3 (1.8%)	2 (1.3%)	5 (1.6%)
Temporal	0 (0.0%)	4 (2.6%)	4 (1.2%)
Parietal	2 (1.2%)	0 (0.0%)	2 (0.6%)

Table 3. Most frequent dental injuries and affected teeth in exams involving interpersonal violence in 2012, 2013 and total.

All injuries	2012 (n = 129)	2013 (n =129)	Total (N = 258)
Most frequent injuries			
Crown fracture	78 (60.5%)	88 (68.2%)	166 (64.3%)
Luxation	51 (39.5%)	41 (31.8%)	92 (35.7%)
Avulsion	15 (11.6%)	23 (17.8%)	38 (14.7%)
Other injuries	13 (10.1%)	15 (11.6%)	26 (10.1%)
Most affected teeth			
Permanent teeth:			
Anterior (11 - 13)	86 (66.7%)	88 (68.2%)	174 (67.4%)
Posterior (14 - 18)	5 (3.9%)	12 (9.3%)	17 (6.6%)
Anterior (21 - 23)	69 (53.5%)	93 (72.1%)	162 (62.8%)
Posterior (24 - 28)	8 (6.2%)	8 (6.2%)	16 (6.2%)
Anterior (31 - 33)	29 (22.5%)	27 (20.9%)	56 (21.7%)
Posterior (34 - 38)	5 (3.9%)	3 (2.3%)	8 (3.1%)
Anterior (41 - 43)	27 (20.9%)	30 (23.3%)	57 (22.1%)
Posterior (44 - 48)	4 (3.1%)	4 (3.1%)	8 (3.1%)
Deciduous Teeth:			
Anterior	5 (3.9%)	5 (3.9%)	10 (3.9%)
Posterior	0 (0.0%)	0 (0.0%)	0 (0.0%)

Table 4. Most frequent bone injuries and affected bones in exams involving interpersonal violence in 2012, 2013 and total.

All injuries	2012 (n = 19)	2013 (n =11)	Total (N = 30)
Most frequent injuries			
Fracture	19 (100.0%)	10 (90.9%)	29 (96.7%)
Fissure	0 (0.0%)	1 (9.1%)	1 (3.3%)
Most affected bones			
Maxilla	13 (68.4%)	5 (45.5%)	18 (60.0%)
Mandible	10 (52.6%)	5 (45.5%)	15 (50.0%)
Zygomatic	7 (36.8%)	5 (45.5%)	12 (40.0%)
Nasal	8 (42.1%)	1 (9.1%)	9 (30.0%)
Orbit	4 (21.1%)	2 (18.2%)	6 (20.0)
Frontal	1 (5.3%)	1 (9.1%)	2 (6.7%)

Table 5. Exams involving interpersonal violence in 2012, 2013 and total, as to criminal classification of injuries in terms of result (Article number 129 of the Brazilian Criminal Code).

		L	30	DB	DF
All tissues	2012 (n=209)	125 (59.8%)	14 (6.7%)	49(23.4%)*	33 (15.8%)*
	2013 (n=196)	105 (53.6%)	16 (8.2%)	70(35.7%)*	46 (23.5%)*
	Total (N=405)	230 (56.8%)	30 (7.4%)	119(29.4%)	79 (19.5%)
Only soft tissues	2012 (n=60)	60 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
	2013 (n=49)	46 (93.9%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
	Total (N=109)	106 (97.2%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Only teeth	2012 (n=33)	20 (60.6%)	2 (6.1%)	12 (36.4%)	9 (27.3%)
	2013 (n=31)	14 (45.2%)	6 (19.4%)	17 (54.8%)	10 (32.3%)
	Total (N=64)	34 (53.1%)	8 (12.5%)	29 (45.3%)	19 (29.7%)
Only bones	2012 (n=2)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
	2013 (n=1)	1 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
	Total (N=3)	1 (33.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Only TMJ	2012 (n=0)	-	-	-	-
	2013 (n=1)	1 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
	Total (N=1)	1 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)

*$p < 0.05$ in the Chi-Square Test.

CONCLUSÃO

- O trauma buco-maxilo-facial decorrente de violência interpessoal alcançou níveis tão preocupantes quanto os de acidentes nos anos de 2012 e 2013 na cidade do Rio de Janeiro.

- Atingiu especialmente homens jovens, brancos e solteiros.

- O soco foi o principal agente lesivo.

- De acordo com o Art. 129 do Código Penal Brasileiro, predominou o dano corporal leve, envolvendo especialmente os tecidos moles.

- As lesões somente aos dentes resultaram em dano corporal leve, grave e gravíssimo.

- Apurou-se que a documentação clínica consiste em importante meio de prova, particularmente nos exames de corpo de delito indireto.

- É fundamental que os profissionais da saúde respeitem os preceitos éticos e legais pertinentes à elaboração e guarda da documentação clínica.

- Sugere-se a realização de estudos epidemiológicos, que abranjam as demais regiões do Estado do Rio de Janeiro e do país para análise mais completa do fenômeno e desenvolvimento de políticas públicas em segurança e saúde.

- É imprescindível a participação do cirurgião-dentista como membro efetivo das equipes forenses.

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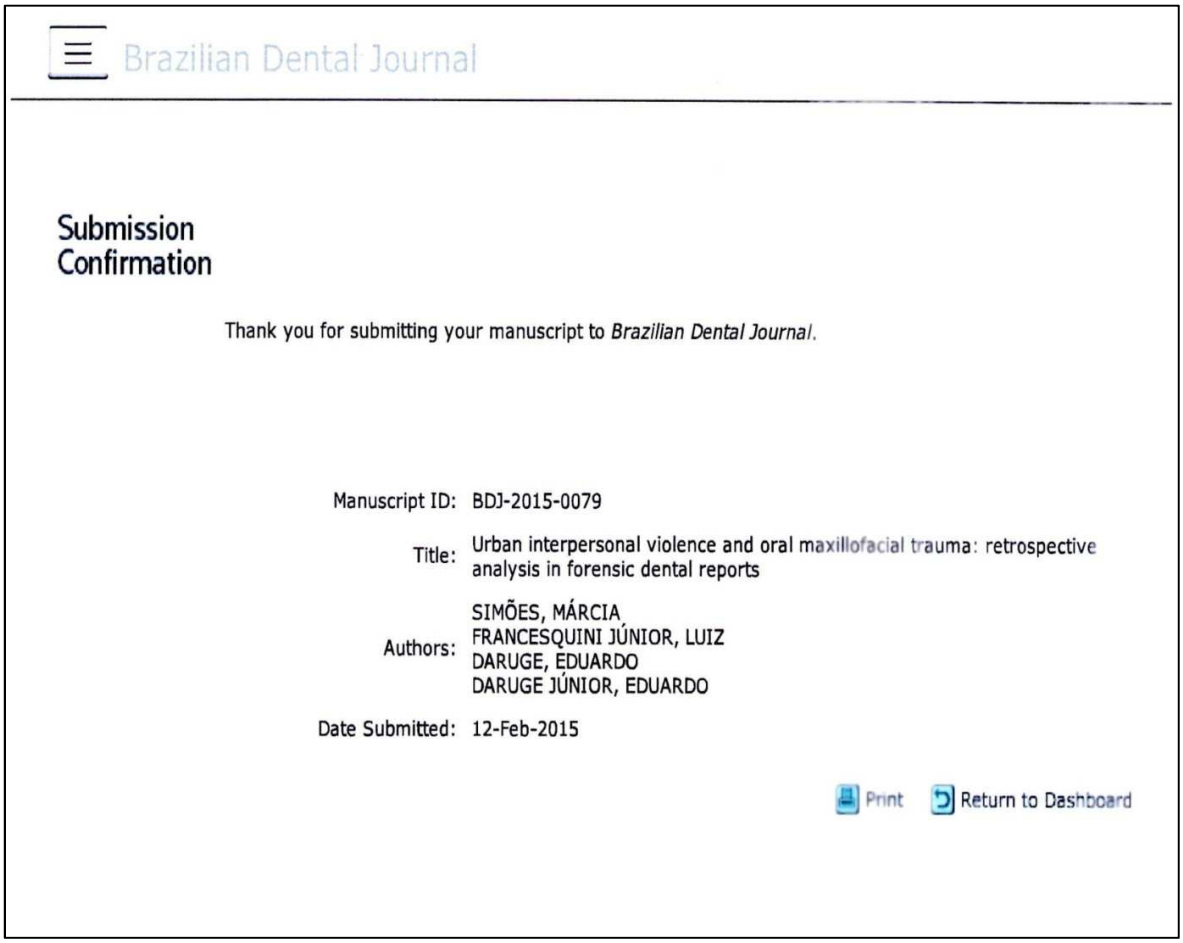
[*] De acordo com as normas da UNICAMP/FOP, baseadas na padronização do International Committee of Medical Journal Editor. Abreviatura dos periódicos em conformidade com o Medline.

ANEXO 1: COMPROVANTE DE SUBMISSÃO DE ARTIGO ONLINE – BRAZILIAN DENTAL JOURNAL



Brazilian Dental Journal

Submission Confirmation

Thank you for submitting your manuscript to *Brazilian Dental Journal*.

Manuscript ID:	BDJ-2015-0079
Title:	Urban interpersonal violence and oral maxillofacial trauma: retrospective analysis in forensic dental reports
Authors:	SIMÕES, MÁRCIA FRANCESQUINI JÚNIOR, LUIZ DARUGE, EDUARDO DARUGE JÚNIOR, EDUARDO
Date Submitted:	12-Feb-2015

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ANEXO 2: CERTIFICADO DO COMITÊ DE ÉTICA EM PESQUISA DA FOP-UNICAMP

08/12/2014 Comitê de Ética em Pesquisa - Certificado

COMITÊ DE ÉTICA EM PESQUISA
FACULDADE DE ODONTOLOGIA DE PIRACICABA
UNIVERSIDADE ESTADUAL DE CAMPINAS

CERTIFICADO

O Comitê de Ética em Pesquisa da FOP-UNICAMP certifica que o projeto de pesquisa **"Violência interpessoal urbana e trauma buco-maxilo-facial sob a óptica dos exames odontológicos de corpo de delito do Instituto Médico-Legal Afrânio Peixoto, Rio de Janeiro, Brasil"**, protocolo nº 037/2014, dos pesquisadores Márcia Pereira Simões, Eduardo Daruge e Eduardo Daruge Júnior, satisfaz as exigências do Conselho Nacional de Saúde - Ministério da Saúde para as pesquisas em seres humanos e foi aprovado por este comitê em 11/06/2014.

The Ethics Committee in Research of the Piracicaba Dental School - University of Campinas, certify that the project **"Urban interpersonal violence and oral and maxillofacial trauma regarded in the light of body of evidence exams in Forensic Dentistry of the Afrânio Peixoto Legal Medicine Institute, Rio de Janeiro, Brazil"**, register number 037/2014, of Márcia Pereira Simões, Eduardo Daruge and Eduardo Daruge Júnior, comply with the recommendations of the National Health Council - Ministry of Health of Brazil for research in human subjects and therefore was approved by this committee on Jun 11, 2014.

Prof. Dr. Felippe Bevilacqua Prado
Secretário
CEP/FOP/UNICAMP

Profa. Dra. Lívia Maria Andaló Tenuta
Coordenadora
CEP/FOP/UNICAMP

Nota: O título do protocolo aparece como fornecido pelos pesquisadores, sem qualquer edição.
Notice: The title of the project appears as provided by the authors, without editing.

file:///C:/Users/M%C3%A1rcia/Documents/ARTIGO,%20RELAT%C3%93RIO%20E%20GR%C3%81FICOS%20DA%20DISSERTA%C3%87%C3%83O... 1/1

ANEXO 3: ARTIGO 129 DO CÓDIGO PENAL BRASILEIRO (Decreto-lei nº 2.848, de 7 de dezembro de 1940).

CAPÍTULO II

DAS LESÕES CORPORAIS

Lesão corporal

Art. 129. Ofender a integridade corporal ou a saúde de outrem:

Pena - detenção, de três meses a um ano.

Lesão corporal de natureza grave

§ 1º Se resulta:

I - Incapacidade para as ocupações habituais, por mais de trinta dias;

II - perigo de vida;

III - debilidade permanente de membro, sentido ou função;

IV - aceleração de parto:

Pena - reclusão, de um a cinco anos.

§ 2° Se resulta:

I - Incapacidade permanente para o trabalho;

II - enfermidade incuravel;

III - perda ou inutilização do membro, sentido ou função;

IV - deformidade permanente;

V - aborto:

Pena - reclusão, de dois a oito anos.

Lesão corporal seguida de morte

§ 3° Se resulta morte e as circunstâncias evidenciam que o agente não quís o resultado, nem assumiu o risco de produzí-lo:

Pena - reclusão, de quatro a doze anos.

Diminuição de pena

§ 4° Se o agente comete o crime impelido por motivo de relevante valor social ou moral ou sob o domínio de violenta emoção, logo em seguida a injusta provocação da vítima, o juiz pode reduzir a pena de um sexto a um terço.

Substituição da pena

§ 5° O juiz, não sendo graves as lesões, pode ainda substituir a pena de detenção pela de multa, de duzentos mil réis a dois contos de réis:

I - se ocorre qualquer das hipóteses do parágrafo anterior;

II - se as lesões são recíprocas.

Lesão corporal culposa

§ 6° Se a lesão é culposa: (Vide Lei nº 4.611, de 1965)

Pena - detenção, de dois meses a um ano.

Aumento de pena

§ 7° No caso de lesão culposa, aumenta-se a pena de um terço, se ocorre qualquer das hipóteses do art. 121, § 4°.

~~§ 7º - Aumenta-se a pena de um terço, se ocorrer qualquer das hipóteses do art. 121, § 4º. (Redação dada pela Lei nº 8.069, de 1990)~~

§ 7º Aumenta-se a pena de 1/3 (um terço) se ocorrer qualquer das hipóteses dos §§ 4º e 6º do art. 121 deste Código. (Redação dada pela Lei nº 12.720, de 2012)

~~§ 8º Aplica-se igualmente à lesão culposa o disposto no § 5º do artigo 121. (Incluído pela Lei nº 6.416, de 24.5.1977)~~

§ 8º - Aplica-se à lesão culposa o disposto no § 5º do art. 121.(Redação dada pela Lei nº 8.069, de 1990)

Violência Doméstica (Incluído pela Lei nº 10.886, de 2004)

~~§ 9º Se a lesão for praticada contra ascendente, descendente, irmão, cônjuge ou companheiro, ou com quem conviva ou tenha convivido, ou, ainda, prevalecendo-se o agente das relações domésticas, de coabitação ou de hospitalidade: (Incluído pela Lei nº 10.886, de 2004) Pena - detenção, de 6 (seis) meses a 1 (um) ano. (Incluído pela Lei nº 10.886, de 2004)~~

§ 9º Se a lesão for praticada contra ascendente, descendente, irmão, cônjuge ou companheiro, ou com quem conviva ou tenha convivido, ou, ainda, prevalecendo-se o agente das relações domésticas, de coabitação ou de hospitalidade: (Redação dada pela Lei nº 11.340, de 2006)

Pena - detenção, de 3 (três) meses a 3 (três) anos. (Redação dada pela Lei nº 11.340, de 2006)

§ 10. Nos casos previstos nos §§ 1º a 3º deste artigo, se as circunstâncias são as indicadas no § 9º deste artigo, aumenta-se a pena em 1/3 (um terço). (Incluído pela Lei nº 10.886, de 2004)

§ 11. Na hipótese do § 9º deste artigo, a pena será aumentada de um terço se o crime for cometido contra pessoa portadora de deficiência. (Incluído pela Lei nº 11.340, de 2006)

(http://www.planalto.gov.br/ccivil_03/Decreto-Lei/Del2848.htm)