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## Classification of dental injuries in women who were victims of physical violence

Original Article

Cárdenas Turrent, Brenda del Socorro <sup>1</sup>; Limón Espinoza, Ipsa Guadalupe <sup>2</sup>

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<sup>1</sup> Dental Surgeon, Master in Forensic Medicine.

<sup>2</sup> Faculty of Medicine "Miguel Alemán Valdés". Universidad Veracruzana

Corresponding author: Brenda del Socorro Cárdenas Turrent, [socorro\\_turrent@hotmail.com](mailto:socorro_turrent@hotmail.com)

### SUMMARY

**Introduction.** A cross-sectional, descriptive, prospective study was carried out, designed to demonstrate that Forensic Dentistry is important in determining physical violence against women, as well

as to classify the most frequent lesions in the oral cavity, maxilla and / or tissues; it was carried out between February 2017 and February 2018 in patients attending consultation in 2 shelters, safe houses, and clerical entities where they were directed by the Veracruzana Institute for Women.

**Methods.** Contingency tables were prepared with the objective of quantifying the frequencies of the variables analyzed (number of participants with a determined characteristic of the total number of participants, expressed in %) of the 268 women evaluated. The results obtained from the descriptive analysis of the population of women evaluated for the presence of lesions in the oral cavity are also described.

**Results:** 18 to 27 years old (26.11%) and 28 to 37 years old (25.74%) are the most frequent age ranges in this sample. With respect to schooling, the presence of upper secondary education in all the groups stands out, with the exception of those composed of participants from 58 to 67 years old, where basic education is the most frequent (54%). In relation to the occupation of the participants, housewives predominated with 45%, followed by workers (43%) and finally students (12%). Regarding the most common types of injuries by age range, it was observed that the most incidents were the rupture of the

labial mucosa and hematomas, both present in 18% of the women evaluated. When analyzing the frequency of the type of injuries by age range these differ from each other; in the case of women between 18 and 27 years old, the injury with vulnerable agent is the most frequent (19%); for the range of 28 to 37 years, jaw fracture, rupture of the labial mucosa and injury with vulnerary agents predominate (14% in each case); in women from 38 to 47 years old it was observed that the hematomas (29%), and the rupture of the labial mucosa (24%) were the most frequent; in relation to the groups of 48 to 57 years and 58 to 67 years are the rupture of labial mucosa (24 and 37% respectively) and hematomas (29 and 34% respectively). Finally, in 93% of the cases, the sentimental partner was the aggressor.

**Conclusion:** With the results obtained, the bases for a practical guide to facilitate the intervention to the victims are provided.

**Keywords:** Gender violence, oral injury, classification, typing, guidance.

## INTRODUCTION

Gender violence is becoming, more and more frequently, a global phenomenon that spreads throughout all countries; affects women of all social, cultural and economic levels [1]. This phenomenon has such an impact that it is recently being considered as a public health problem. For this reason, it not only considers social policies of awareness and prevention, but also values the need to articulate specific measures and resources that respond comprehensively to extreme situations [2-3].

Violence against women is one of the main problems in our society; it is recognized as a public health problem, proclaimed by the World Health Organization, for having a great impact directly on the victim, the family and its environment [4-5].

Violence against women is a manifestation of historically unequal power relations between men and women, which have led to the domination of women and discrimination against them by men; violence against women is one of the fundamental social mechanisms for subjecting women to a situation of subordination to men [6-9].

The study of this problem starts from the quantification of gender violence against women by any person in the different areas of social work: family (sexual and intrafamily violence) or employment; there are different types of partner violence towards women: physical, psychological, sexual and patrimonial; this is influenced by various socioeconomic factors in the incidence of aggression by the sentimental partner [10]. It should be taken into account the diversity of relationships that are experienced throughout life, suffered both by their current partner and those experienced in previous relationships, regardless of whether or not there was coexistence between them [11].

Within this type of abuse, the one exercised by men towards their sentimental partners considers three types of violence that interrelate within the situations of abuse: Physical violence, psychological violence and sexual violence, whose severity and frequency vary from a situation to another [12-13]: Physical violence is understood as any action voluntarily carried out that causes or may cause harm or physical injury to women [14], such as pushing, giving slapping, punching or kicking, etc ; psychological violence is defined as a set of behaviors that produce devaluation or suffering in those who experience it [15-17]; and Sexual Violence, which includes coercive and physical behaviors that range from trying to persuade someone to perform a sexual act against their will, to forced sexual acts [18].

Forensic Odontology plays a fundamental role in the evaluation of injuries; it deals with cases of professional responsibility in dental health and dental identification, although it also has application in the assessment of the

clinical age of living people; this type of expertise should be consulted in the current version of the Technical Regulation for the determination of age in Forensic Clinic, the Institute of Legal Medicine and Forensic Sciences [19-20].

This protocol arises with the aim of facilitating and guiding the actions of the medical or odontological team and to help size the problem [21]. This study aims to demonstrate the importance of Forensic Odontology in gender violence, which will serve as a practical guide to facilitate the intervention of Forensic Dental Science professionals [22], determining parameters in the timely detection and correct follow-up.

It is necessary to identify the epidemiological profile of women victims of violence and the characteristics of the type of bucodentomaxillary lesions they present [23], such as the following: Maxillary Fracture, Jaw Fracture, Lip Mucosa Rupture, Hematomas, Injury with short agent forceful, Injury With Vulnerant agent, Contusion, Projectile, tongue injuries, vestibular lesions and lesions in Gingiva (Encia). It is necessary to physically recognize, describe and locate them, both morphologically and functionally [24].

## **METHODS**

The present investigation is of observational, descriptive, transversal and prospective type. This study was carried out in the Rafael Lucio and Casa de las Mujeres Veracruzana hostels, which are authorized for the care of vulnerable women, referred by the Veracruzana Institute of Women (INMUJERES) in the city of Xalapa, Veracruz. . The evaluation was conducted in the period from

November 2016 to December 2017; a total of 268 women between 18 and 67 years of age were evaluated.

Women who were referred by the INMUJERES to the Rafael Lucio and Casa de las mujeres Veracruzana hostels were invited to participate. Objectives as well as the procedure of the study were explained. Subsequently they were asked to sign an informed consent.

268 participants were selected by convenience sampling; the size of the sample was adjusted to participation. This type of sampling was used due to the availability of the participants, since it provides operational advantages and low cost during the collection of the information.

The registration of the socio-demographic data, such as age, schooling, occupation and the relationship with the aggressor, was made through an identification card. Typograms and odontograms were designed to obtain the information related to the injuries. The classification of the lesions was based on "The Universal Catalog of Health Services (CAUSES)"; using the following instruments and methods of barrier: hat,

## RESULTS

The results obtained from the descriptive analysis of the population of

gloves, mouth covers, exploration clamp, mouth opener and forensic mirrors.

We sought to identify the presence of the following bucco-dental-maxillary lesions: Maxillary fractures, jaw fracture, rupture of the labial mucosa, bruises, injuries with sharp-edged agents, injuries with a vulnerating agent, contusion, gunshot injury, dental organ fracture, tongue injury, vestibular lesions and gum lesions.

Contingency tables were drawn up in order to quantify the frequencies of the analyzed variables (number of participants with a determined characteristic of the total number of participants expressed in%). These tables are useful because they allow us to see the distribution of the variables; however, they do not establish the possible association between them; in order to demonstrate statistically the association between the different variables analyzed, the Chi square test ( $\chi^2$  or  $\chi^2$ ) was used; it allows us to establish the relationship between two independent qualitative variables. All analyzes were carried out in the IBM SPSS Statistics 21 statistical program, using Spearman's bivariate analysis to determine the degree of correlation between them.

women evaluated for the presence of lesions in the oral cavity are described below. Table 1 shows the age distribution of the population studied.

Rango de edad	N	%
<b>18 a 27</b>	70	26.11
<b>28 a 37</b>	69	25.74
<b>38 a 47</b>	53	19.77
<b>48 a 57</b>	41	15.29
<b>58 a 67</b>	35	13.05
<b>Total</b>	268	100

Table 1. Distribution of participants by decennial age groups

Regarding schooling, 56% (150) have higher secondary education. The presence of upper secondary education in all the groups is highlighted, with the exception of the one composed of participants from 58 to 67 years old where basic education is the most frequent

(54%); the rest of the variables can be seen in Table 2. The information obtained in this research differs from some authors who mention the influence of schooling associated with risk factors of gender violence.

Escolaridad	Rango de edad										Total	
	18 a 27 (n=70)		28 a 37 (n=69)		38 a 47 (n=53)		48 a 57 (n=41)		58 a 67 (n=35)		n	%
	n	%	n	%	n	%	n	%	n	%		
Analfabeta	0	0	0	0	0	0	2	4.9	5	14	7	2.6
Básica	8	11	4	5.8	2	3.8	12	29	<b>19</b>	<b>54</b>	45	17
Media superior	<b>47</b>	<b>67</b>	<b>40</b>	<b>58</b>	<b>35</b>	<b>66</b>	<b>20</b>	<b>49</b>	8	23	<b>150</b>	<b>56</b>
Licenciatura	14	20	23	33	14	26	6	15	2	5.7	59	22
Posgrado	1	1.4	2	2.9	2	3.8	1	2.4	1	2.9	7	2.6

Tabla 2. Frecuencias del grado de escolaridad por rangos de edad.

In relation to the occupation of the participants, housewives predominated

with 45%, followed by the workers (43%) and finally the students (12%) (Table 3).

Ocupación	Rango de edad										Total	
	18 a 27		28 a 37		38 a 47		48 a 57		58 a 67			
	(n=70)	(n=69)	(n=53)	(n=41)	(n=35)	n	%	n	%	n	%	n
Estudiante	27	39	3	4.3	1	1.9	0	0	0	0	<b>31</b>	<b>12</b>
Ama de casa	18	26	31	45	26	49	21	51	25	71	<b>121</b>	<b>45</b>
Trabajadora	25	36	35	51	26	49	20	49	10	29	<b>116</b>	<b>43</b>

Tabla 3. Frecuencias de la ocupación por rangos de edad.

Regarding the most common type of injuries by age range, it was observed that the most incidents were the rupture of the labial mucosa and the hematomas, both present in 18% of the women evaluated. When analyzing the frequency of the type of injuries by age range these differ from each other; in the case of women between 18 and 27 years of age, the injury with vulnerable agent is predominant (19%); for the range of 28 to 37 years, the fracture of the jaw, rupture of the labial mucosa and

injury with a vulnerating agent have the highest percentages (14% in each case); in women aged 38 to 47 years, it was observed that bruising (29%) and rupture of labial mucosa (24%) were the most frequent; in relation to the groups of 48 to 57 years and 58 to 67 years are the rupture of labial mucosa (24 and 37% respectively) and hematomas (29 and 34% respectively) which have the highest percentages (Table 4).

Tipo de lesión	Rango de edad										Total	
	18 a 27		28 a 37		38 a 47		48 a 57		58 a 67			
	(n=70)	(n=69)	(n=53)	(n=41)	(n=35)	n	%	n	%	n	%	n
Fractura de maxilar	4	5.7	5	7.2	1	1.9	2	4.9	0	0	<b>12</b>	<b>4.5</b>
Fractura de mandíbula	8	11	<b>10</b>	<b>14</b>	2	3.8	1	2.4	0	0	<b>21</b>	<b>7.8</b>
Ruptura mucosa labial	3	4.3	<b>10</b>	<b>14</b>	<b>11</b>	<b>21</b>	<b>10</b>	<b>24</b>	<b>13</b>	<b>37</b>	<b>47</b>	<b>18</b>
Hematomas	7	10	7	10	<b>11</b>	<b>21</b>	<b>12</b>	<b>29</b>	<b>12</b>	<b>34</b>	<b>49</b>	<b>18</b>
Lesión con agente corto contundente	6	8.6	3	4.3	9	17	3	7.3	3	8.6	<b>24</b>	<b>9</b>
Lesión con agente vulnerante	<b>13</b>	<b>19</b>	<b>10</b>	<b>14</b>	4	7.5	1	2.4	2	5.7	<b>30</b>	<b>11</b>
Contusión	5	7.1	2	2.9	0	0	0	0	0	0	<b>7</b>	<b>2.6</b>
Proyectil	2	2.9	0	0	1	1.9	0	0	0	0	<b>3</b>	<b>1.1</b>
Fractura de órgano dental	4	5.7	9	13	2	3.8	1	2.4	0	0	<b>16</b>	<b>6</b>
Lesiones en lengua	8	11	4	5.8	3	5.7	0	0	0	0	<b>15</b>	<b>5.6</b>
Lesiones en vestíbulos	6	8.6	5	7.2	7	13	7	17	3	8.6	<b>28</b>	<b>10</b>
Lesiones en <u>gíngiva</u>	4	5.7	4	5.8	2	3.8	4	9.8	2	5.7	<b>16</b>	<b>6</b>

Tabla 4. Tipificación de las lesiones en la cavidad oral por rangos de edad.

Table 5 shows that intrafamily violence is presented as a constant with the

highest percentages. These prevalence occurred in all age groups.

Tipo de violencia	Rango de edad										Total	
	18 a 27 (n=70)		28 a 37 (n=69)		38 a 47 (n=53)		48 a 57 (n=41)		58 a 67 (n=35)			
	n	%	n	%	n	%	n	%	n	%	n	%
Delito Sexual	11	16	0	0	1	1.9	0	0	4	11	<b>16</b>	<b>6</b>
Violencia intrafamiliar	<b>53</b>	<b>76</b>	<b>66</b>	<b>96</b>	<b>51</b>	<b>96</b>	<b>40</b>	<b>98</b>	<b>29</b>	<b>83</b>	<b>239</b>	<b>89</b>
Violencia laboral	0	0	0	0	0	0	0	0	0	0	<b>0</b>	<b>0</b>
Violencia urbana	6	8.6	3	4.3	1	1.9	1	2.4	2	5.7	<b>13</b>	<b>4.9</b>

Tabla 5. Tipos de violencia por rangos de edad.

With respect to the analysis to establish the association between the type of injury and the type of violence experienced by the participants, the Chi-square test was performed, in which a significance value of  $p = 0.000$  was

obtained; this indicates that the type of injury is related to the type of violence. Figure 1 shows that the rupture of labial mucosa and hematomas have a greater incidence in intrafamily violence.

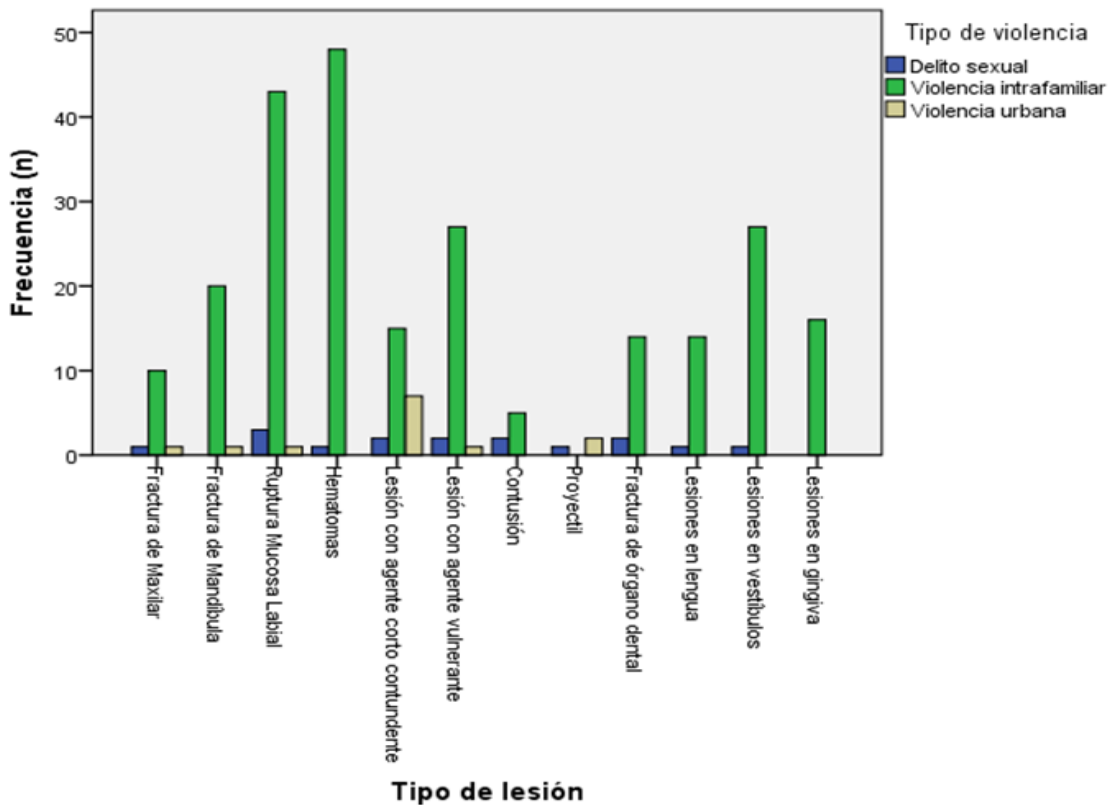


Figura 1. Distribución de los tipos de lesión según el tipo de violencia experimentada.

On the other hand, to determine the degree of association, the Spearman correlation analysis was performed,

resulting in a correlation coefficient value of 0.478, which corresponds to a weak positive correlation as reported by

Martínez Ortega et al. (2009); this result may be influenced by the variability of the lesions evaluated and the high frequency of intrafamily violence in the population.

## DISCUSSION

After carrying out the corresponding evaluations and using the methods already known and mentioned previously, it is concluded that in the last decades the physical mistreatment towards women has increased and is considered a public health problem according to the WHO [25-27].

Gender violence in all its manifestations must be recognized: from the physical to the psychological perspectives; the legal complaint of the victim allows visualize it as a social problem and not only private.

The essential features of gender violence must necessarily be treated from a multidisciplinary approach; this is why the role of the forensic dentist is relevant.

The legislation lacks an effective protection mechanism for women victims of violence within the conjugal relationship, this being the area in which this problem predominates; in the present study we observed that the main victimizer is the sentimental couple.

Schooling and occupation are not considered determining factors to suffer physical violence; in our study only 2 women lacked school instruction. It is noteworthy that the groups of young women are those who were considered the most defenseless.

The buccodentomaxillary lesions are not considered of great importance, for

the repair of the damage and the application of legal sanctions, becoming incapacitating (in the case of fractures). It is important that these concepts are included in the proposals to legislate this major public health problem.

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