REUE | Original Article

Injuries due to gender-based violence

Luís Martínez-Sañudo, María del Mar Pizà Serra, Mireia Viñas Noguera, Mercè Pérez Chico, Sandra Mallorquín Rama, Xavier Pelfort López

OBJECTIVE. To determine the injuries that most often bring patients to the emergency department after gender-based violence so that cases can be identified quickly and proper interventions begin.

MATERIAL AND METHODS. Observational analysis of a retrospective cohort. We included patients identified as victims of gender-based violence treated in our hospital between 2018 and 2022, collecting demographic data and classifying injuries by type and anatomical locations. Descriptive statistics were compiled.

RESULTS. A total of 199 patients were included. The patients usually arrived at night and most often on Fridays. More patients were seen in July and August. On arrival 86.93% of the patients had bruises, 30.15% had wounds, and 5.03% had fractures. The most common profile was a patient with 1 or more bruises on the face and/or neck and associated bruising in another location. The most common face and neck lesions were bruises in the anterolateral cervical region (48.54%).

CONCLUSIONS. We do not extrapolate from this study to draw population-relevant conclusions, but rather to present observations from our hospital that can serve as a starting point for future studies. Understanding the most common patterns of injuries arising from gender-based violence can be useful for acting quickly and breaking the cycle of abuse.

Keywords: Gender-based violence: assaultive behavior. Aggression. Injuries. Emergency department.

Lesiones físicas por violencia de género identificadas en urgencias

OBJETIVO. Conocer qué lesiones son las más frecuentes como motivo de consulta en pacientes víctimas de violencia de género (VG), al acudir a urgencias, y con ello poder identificar los casos de forma temprana y poder intervenir adecuadamente.

MATERIAL Y MÉTODOS. Estudio observacional descriptivo de tipo cohorte retrospectivo. Incluimos las pacientes identificadas como víctimas de VG atendidas en el Servicio de Urgencias de un Hospital de referencia, entre 2018 y 2022. Se analizaron datos demográficos de las pacientes y clasificamos las lesiones según su tipología y localización anatómica.

RESULTADOS. Se incluyeron 199 pacientes en el estudio. El horario de llegada más frecuente fue la noche, el día más reiterado el viernes y los meses con más pacientes julio y agosto. Las pacientes acudieron a urgencias presentando contusiones en un 86,93% de los casos, heridas en un 30,15% y fracturas en un 5,03%. El patrón más repetido fue el de una o varias contusiones en cara y/o cuello asociados a una contusión en otra localización. Dentro del subanálisis de lesiones en cara y cuello, lo más frecuente fueron las contusiones en región cervical anterolateral (48,54%).

CONCLUSIÓN. Conocer los patrones lesionales más repetidos en la VG es una herramienta útil para poder intervenir con prontitud y romper el ciclo de la VG.

Palabras clave: Violencia de género. Abuso. Agresión. Lesiones. Servicio de urgencias.

Author Affiliations: Hospital Universitari Parc Tauli, Sabadell, Barcelona, Spain.
Corresponding Author: María del Mar Pizà Serra. Hospital Universitari Parc Tauli. Parc Taulí, 1. 08208 Sabadell, Barcelona, Spain.
E-mail: mmpiza@tauli.cat
Article Information: Received: 15-1-2024. Accepted: 25-3-2024. *Online:* 10-4-2024.
Editor in Charge: María Elena Castejón-de la Encina.

Introduction

The latest data released by the World Health Organization indicate that there is an estimated global prevalence of being a victim of gender-based violence (GBV) of one in three women throughout their lives.[1,2] In Spanish legislation, GBV is defined as "violence exerted against women by those who are or have been their spouses or by those who are or have been linked to them by similar emotional relationships."[3] Over the past 20 years, more than 1,200 women in Spain have been killed as a result of GBV.[4] These figures, together with the growing denialist discourse on GBV among younger generations,[5] underscore why GBV is currently considered a major public health issue.

Among all criminal offenses related to GBV, physical injuries are the most frequent (51.2% in 2019),[6] which means that the emergency department (ED) is often the first point of care for women in this situation. According to data collected by Wadman *et al.*,[7] up to 44% of homicide victims related to GBV had visited an ED within the two years preceding their death. Therefore, the health care system's ability to detect such cases can play a crucial role in their identification, prevention, and management.

When a physician identifies a situation of risk related to GBV, it is essential not only to activate the hospital's internal protocols but also to complete the injury report. However, between 2007 and 2019, only 10.8% of complaints in Spain originated from injury reports. Although this percentage has increased nationally, in some regions the number of reports remains very low.[6]

Violent acts result in physical harm, disability, sequelae, a large number of potential years of life lost, and decreased quality of life. Moreover, the economic cost to society increases, as victims use more health care resources.[8,9]

The description of physical injury patterns can be extremely useful for the early identification of GBV cases. According to the PRAISE study,[10] one in fifty women attending a fracture clinic is a GBV victim, and three in one hundred women treated for an acute musculoskeletal injury are victims of GBV. Given these findings, the ED occupies a unique position in detecting such cases.[8]

However, patients do not always report or verbalize the cause or mechanism of injury within the hospital setting. We believe that understanding the demographics and injury patterns that most frequently lead women to seek emergency care can help health care professionals to identify GBV cases early and intervene appropriately.

Material and methods

We conducted a retrospective observational descriptive cohort study. The study population included female patients identified as victims of GBV who were treated at the Traumatology Emergency Department of *Hospital Universitari Parc Taulí* between January 1st, 2018, and August 31st, 2022. Using the hospital's Clinical Documentation Department, we selected patients from the "emergency discharge" registry with a primary or secondary diagnosis of "adult physical abuse (T7411XA)" or "suspected adult physical abuse (T7611XA)" during the specified period. This initial search yielded 627 cases.

The inclusion criteria were: female patients treated in the ED during the study period, victims of aggression perpetrated by current or former intimate partners or individuals with emotional ties, as defined in the Spanish legal framework. We excluded patients who were victims of violence outside the legal scope of GBV (e.g., sexual assault or other types of violence by strangers, or intra-family violence not meeting the GBV definition). Available health records were accessed through the hospital's information system (HCIS 4.0), and each ED discharge report was reviewed to confirm compliance with inclusion criteria.

We collected data in a pre-coded Excel spreadsheet specifically designed and validated for this purpose, including demographic information (age, country of origin, day of the week, and time of arrival), as well as physical examination and diagnostic findings. Patient-identifying data were anonymized. Injuries were categorized by type (contusion, wound, or fracture) and by anatomical location, both general and specific: head/neck (subdivided into orbital, nasal, labial, peripheral facial, cranial, and anterolateral cervical regions), trunk (thoracic, abdominal, or lumbar regions), upper limb (arm/forearm, shoulder, wrist, hand, digits), and lower limb (thigh/leg, knee, ankle).

The study was approved by the hospital's Clinical Research Ethics Committee.

Data analysis was performed using Excel and RStudio 2023.03.0 (R version 4.2.2). Lesions were analyzed according to number of injuries and injury type (contusions, wounds, and fractures).

Results

We identified a total of 199 cases that met the inclusion criteria for GBV victims, representing an annual average of 40 cases and between one and two cases per month, depending on the time of year. Figure 1(d) shows the annual trend of cases. Data from 2022 included only cases through August. The number of ED visits for this reason increased significantly in recent years. The most frequent nationality among victims was Spanish (62.31%), followed by Bolivian (7.04%), Ecuadorian (5.03%), and Moroccan (4.02%).

Regarding epidemiology, Friday was the day with the highest number of visits (Figure 1a). As shown in Figure 1(b), the most common time of presentation was in the afternoon (12:00–19:00), followed by evening (19:00–00:00) and early morning (00:00–06:00). The fewest visits occurred in the morning (06:00–12:00). Figure 1(c) illustrates the monthly distribution, with July and August showing the highest number of visits—each registering 40% more than the next most frequent month (April).

According to injury type, 5.03% of patients (n = 10) had fractures, 30.15% (n = 60) had wounds, and 86.93% (n = 173) had contusions. Two-thirds of patients (67.34%) presented with multiple injuries, while 32.66% had a single injury. Tables 2, 3, and 4 show the distribution of each injury type (contusion, wound, or fracture) according to anatomical location.

Table 1. General pattern of injuries all recorded injuries are presented according to the number of injuries (1, 2, or 3 or more) and, secondarily, by type. All percentages refer to the total number of injuries. (H/N = head and/or neck)

Type of injury	Location			%	n
Single injury (n = 65; 32.66%)					
Contusion (23.62%; n = 47)	Head and neck			13.07	26
	Upper limb			5.03	10
	Lower limb			2.01	4
	Trunk			3.52	7
Wound (6.53%; n = 13)	Head and neck			4.02	8
	Upper limb			1.51	3
	Lower limb			0.50	1
	Trunk (thorax)			0.50	1
Fracture (2.52%; n = 5)	Tibial plateau			0.50	1
	Nasal			0.50	1
	Clavicle			0.50	1
	Rib			0.50	1
	Distal phalanx (hand)			0.50	1
2 injuries (n = 70; 35.18%)					
Contusions (25.63%; n = 51)	Contusions to the head and neck only or in combination with other sites (42.86%, n = 30)	Contusions on the face, neck, and upper extremities		6.53	13
		Contusions on the face and neck		3.02	6
		Contusions on the faces		2.01	4
		Contusions on the face or neck and lower extremities		2.01	4
		Contusions on the face, neck, or torso		1.51	3
	Contusions to the upper limb only or in combination with other sites (38%, n = 27)	Contusions on upper and lower limbs		3.52	7
		Contusions on upper limbs and trunk		2.01	4
		Contusions on upper limbs		1.51	3
		Contusions on the lower extremities and trunk		3.02	6
		Contusions on the trunk		0.50	1
Contusion + wound (7.04%; n = 14)	Wound to the face and/or neck (8.57%, n = 6)	and contusion on the face and/or neck		2.51	5
		and contusion in upper limb		0.50	1
	Wound to the upper limb (11.42%, n = 8)	and contusion on the face and/or neck		1.01	2
		and contusion in upper limb		1.01	2
		and contusion in lower limb		1.01	2
		and chest contusion		1.01	2
Wounds (2.01%; n = 4)	Trunk wound + contusions (H/N + upper limb)	Arm and wrist		0.50	1
		Arm + knee		0.50	1
		Lip + fingers		0.50	1
	Wounds to the face and/or neck (face and lip)			0.50	1
Fracture + wound (0.5%; n = 1)	Nasal fracture with peripheral facial wound			0.50	1
3 or more injuries (n = 64; 32.16%)					
Multiple contusions (17.59%; n = 35)	Contusions to the head and/or neck only or in combination with other sites (85.71%, n = 30)	Contusions on the head and/or neck and upper extremities only or together with other locations (51,43%, n: 18)	H/N and upper limb	5.53	121
			H/N and upper limb, lower limb	2.01	4
			H/N and trunk, upper limb	1.51	3
		H/N and lower limb		2.51	5
		H/N and trunk		2.01	4
		Multiple contusions on H/N		1.01	2
		H/N and lower limb, trunk		0.50	1
	Contusions to the upper limb in combination with other sites (65.71%, n = 23)	Upper extremity, lower extremity, and trunk		1.51	3
		Upper extremity and trunk		1.01	2
1 or more contusions and one or more wounds (12.56%, n = 25)	Would to the upper limb (n = 14)	Multiple wounds to the upper extremity		0.50	1
		Upper limb injuries and trunk contusions		2.01	4
		Upper limb injuries and upper limb contusions		2.51	5
		Upper limb injuries and lower limb contusions		0.50	1
		Upper limb injuries and bruises on the face and neck		1.01	2
		Multiple injuries to upper limb, face, and neck		0.50	1
	Wound to head and neck (n = 5)	Multiple wounds to the face and neck, along with contusions to the upper extremities		1.51	3
		Multiple wounds to the face and/or neck		0.50	1
	Wound and contusions to the head and neck (n = 6)	Multiple wounds and bruises on the face and neck, and bruises on the upper extremities		1.51	3
		Multiple wounds and bruises on the face and neck		0.50	1
		Multiple wounds and bruises on the face and neck, and bruises on the lower extremities		0.50	1
		Multiple wounds and bruises on the face and neck, and bruises on the torso		0.50	1
	Injury to the torso with bruising on the face, neck, and upper limb			0.50	1
Fracture + multiple contusions ± wounds (2.01%; n = 4)	Nasal fracture + facial wounds + limb contusions			1.01	2
	F3 fracture + contusions (lower limbs)			0.50	1
	F3 fracture + facial contusions			0.50	1

Table 2. Distribution of contusions by location and, secondarily, by associated injuries. Symbols *, **, ***, ^, ¨ and ´´ indicate duplicate entries in the table

Location of contusions	Associated injuries		%	n
Contusions to the head and neck (51.76%, n = 103)	As single injury (one or several)		19.10	38
	Associated with contusions (24.62%, n = 49)	Associated with contusions to the upper limb	16.08	32*
		Only	12.06	24
		Together with contusions to the lower limbs	2.01	4**
		Together with contusions or wounds to the trunk	2.01	4***
		Associated with contusions to the lower limb	7.04	14
		Only	4.52	9
		Along with contusions on the upper limbs	12.06	4**
		Along with contusions on the trunk	0.50	1^
		Associated with contusions on the torso	5.53	11
		Only	3.52	7
		Together with contusions to the upper limbs	2.01	4***
		Together with contusions to the trunk	0.50	1^
	Associated with wounds (7.54%, n = 15)	Associated with wounds to the face and neck	5.53	11
		Only	3.02	6
		Together with contusions to the upper limbs	1.51	3¨
		Together with contusions in other locations	1.01	2
		Associated with wounds to the upper limb	2.01	4
	Associated with fracture (3rd phalanx of the finger)		0.50	1
Contusions to the upper limb (38.19%, n = 76)	As a single injury (one or more)		6.53	13
	Associated with contusions (24.12%, n = 48)	Associated with contusions to the face and neck	16.08	32*
		Associated with contusion to the lower limb	5.03	10
		Only	3.52	7
		Together with contusions to the trunk	1.51	3
		Associated with contusion to the trunk	3.02	6
	Associated with wounds (7.04%, n = 14)	Associated with wounds to the upper limb	3.52	7
		Associated with wounds to the face and neck	3.52	7
		Only	2.01	4
		Together with contusions to the face and neck	1.51	3¨
	Associated with a nasal fracture		0.50	1
Contusions to the lower limb (16.58%, n = 33)	As single injury (one or several)		2.01	4
	Associated with contusions to the trunk		3.02	6
	Associated with wound to the upper limb		1.01	2
	Associated with fractures		1.01	2
	Associated with contusions or injuries already mentioned in the table		9.55	19´´
Contusions to the trunk (20.60%, n = 41)	As single injury (one or several)		4.02	8
	Associated with wound to the upper limb		3.02	6
	Associated with wound to the upper limb and contusion to the lower limbs		0.50	1
	Associated with contusions or wounds already mentioned in the table		13.07	26´´
Total patients with contusions			**86.93**	**173**

Table 2 includes the 173 patients (86.93%) with contusions, either as the only injury (n = 47) or combined with others (n = 126). The most frequent pattern was one or more contusions on the face and/or neck combined with another contusion on the trunk or limbs (n = 49), representing 49.57% of patients with facial/neck contusions, 27.84% of those with contusions overall, and 23% of all patients in the analysis. Within the face and neck subanalysis (Table 5), the most frequent sites were the anterolateral cervical region (48.54%), often secondary to strangulation attempts, followed by the peripheral facial region (32.04%) and orbital region (17.48%).

Table 3 illustrates the 60 patients with wounds (30.15%). The most affected region was again the face and/or neck (n = 30), with 50% of these wounds associated with contusions, and 33% appearing as isolated injuries.

Table 4 illustrates that 5.03% of patients (n = 10) had fractures, most commonly nasal fractures and digital phalangeal fractures, particularly of the distal phalanx.

Discussion

The most commonly described mechanism of injury in the literature is direct assault by the partner or ex-partner, followed by falls resulting from the assault.[9] In our study, the most frequent reason for consultation following an episode of GBV was contusions (86.93%), of which 23.63% occurred as a single injury. Loder *et al.*,[8] after analyzing data from approximately one hundred U.S. hospitals, also reported contusions and/or abrasions (43.4%) as the most common diagnoses. In our study, wounds were observed in 30.15% of patients and fractures in 5.03%. Loder *et al.*[8] reported 16.9% wounds and 9.7% fractures.

The analyses of studies such as PRAISE[10] and Thomas *et al.*[11] found a higher proportion of fractures—representing nearly two-thirds of all diagnosed injuries in the PRAISE study and almost 20% in Thomas's results. However, it should be noted that in the former, only sprains, strains, and fractures were included, and the percentages were calculated from all recorded injuries. In the latter,

Table 3. Distribution of wounds by location and, secondarily, by associated injuries. Symbols * and ** indicate duplicated entries in the table

Location of wounds	Associated injuries		%	n
Head and neck wounds (15.08%, n = 30)	As single injury (one or more)		5.03	10
	Associated with wounds in upper limb		1.01	2*
	Associated with contusions		7.54	15
	In face and neck		5.53	11
		In face and neck only	3.02	6
		In face and neck + upper limb	1.51	3**
		In face and neck + lower limb	0.50	1
		In face and neck + trunk	0.50	1
	In upper limb		3.52	7
		In upper limb only	2.01	4
		In face and neck + upper limb	1.51	3**
	Associated with fractures		1.51	3
		Nasal fracture with peripheral facial wound	0.50	1
		Nasal fracture + wounds in face/neck + contusions in limbs	1.01	2
Upper limb wounds (13.07%, n = 26)	As single injury (one or more)		2.51	5
	Associated with wounds in lower limb		0.50	1
	Associated with wounds in face and neck		1.01	2*
	Associated with contusions		10.05	20
		In upper limb	3.52	7
		In face and neck	2.01	4
		In lower limbs	1.51	3
		In trunk	3.02	6
Wounds in other locations (2.01%, n = 4)	Trunk (1 as single injury, 1 associated with others)		1.01	2
	Lower limbs (1 as single injury, 1 associated with others)		1.01	2
Total patients with wounds			**30.15**	**60**

Table 4. Distribution of fractures by location and, secondarily, by associated injuries

Location of fractures	Associated injuries		%	n
Head and/or neck fractures	Nasal fracture (2.01%, n = 4)	Isolated nasal fracture	0.50	1
		Nasal fracture with peripheral facial wound	0.50	1
		Nasal fracture with facial wound and contusions in limbs	1.01	2
Upper limb fractures	3rd phalanx fracture of the hand (1.51%, n = 3)	F3 fracture with wounds and contusions in lower limbs	0.50	1
		F3 fracture with facial contusions	0.50	1
		F3 finger fracture	0.50	1
Trunk fractures	Rib fracture		0.50	1
	Clavicle fracture		0.50	1
Lower limb fractures	Tibial plateau fracture		0.50	1
Total patients with fractures			**5.03**	**10**

Table 5. Specific anatomical location of head and/or neck injuries

Type of injury	Specific anatomical location	%	n
Head and neck contusions (51.76%, n = 103)	Orbital region	17.48	18
	Nasal region	11.65	12
	Labial region	9.71	10
	Peripheral facial region	32.04	33
	Cranial region	16.50	17
	Anterolateral cervical region	48.54	50
Head and neck wounds (15.08%, n = 30)	Orbital region	13.33	4
	Nasal region	10.00	3
	Labial region	40.00	12
	Peripheral facial region	33.33	10
	Cranial region	6.67	2
	Anterolateral cervical region	16.67	5
Head and neck fractures (2.01%, n = 4)	Nasal region	2.91	4

*In cases where patients had two or more injuries, they could present with more than one contusion or wound on the head and/or neck and therefore be represented more than once in this table.

the data came from a retrospective review of radiologic images, so only patients who required imaging due to clinical suspicion were included, thereby excluding more minor injuries.

Multiple previous studies have identified the head, face, and neck as the most frequently affected regions in GBV.[8,11-13] This finding is consistent with our results, where the head and/or neck accounted for 51.76% of contusions,

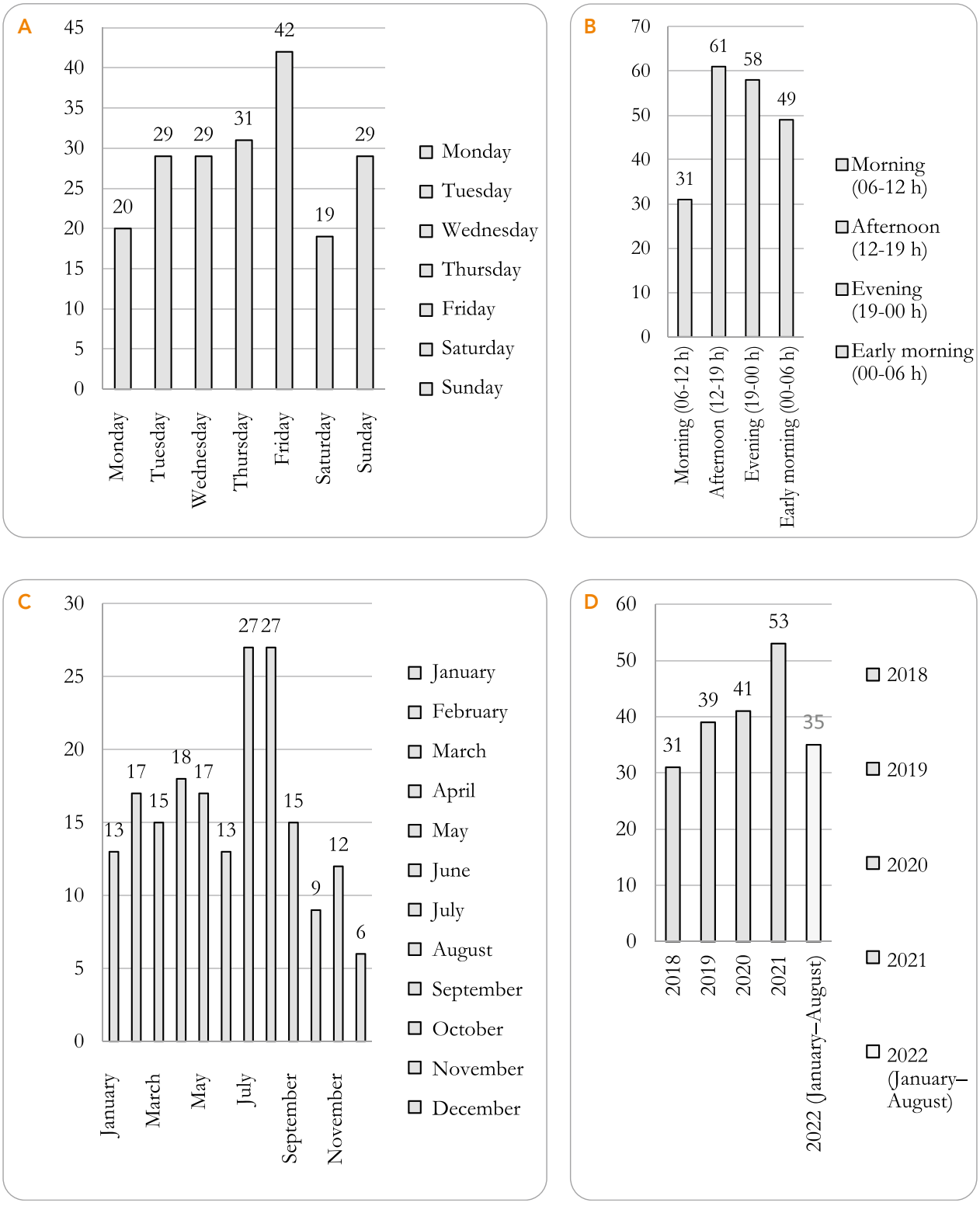

Figure 1. Upper left (a): number of cases recorded by day of the week; upper right (b): number of cases recorded by time of day; lower left (c): number of cases recorded by month of the year; lower right (d): annual number of cases.

50% of wounds, and 40% of fractures. The most common injury mechanism involved blunt trauma from the aggressor's fist or open hand to these regions, or strangulation in the case of anterolateral cervical injuries.

Among the fractures observed in our study, 40% (4/10) were nasal, aligning with the predominance of head and neck involvement, and 33% were finger fractures, specifically of the distal phalanges. Loder *et al.*[8] also observed

that, in the upper extremity, the most common injuries among GBV victims occurred in the fingers, with distal phalangeal fractures and interphalangeal subluxations being the most frequent. Finger fractures are less common in the general population, typically resulting from sports injuries or accidental trauma (e.g., doors or tools). When such explanations seem implausible, clinicians should consider the differential diagnosis that the injury may have been caused by assault.[11]

Several reviews indicate that extremity injuries are more often observed during the early phases of abuse, whereas injuries to the face, chest, and abdomen tend to appear later in the GBV cycle.[12,14,15]

In 87.43% of cases, patients presented injuries in multiple anatomical regions. Petridou *et al*.[16] noted in their review that women with multiple injuries were much more likely to be victims of GBV than of accidental falls. Similarly, Spedding *et al*.[17] reported that the number of injuries differed by aggression type: the median number exceeded two injuries in GBV-related assaults vs one in non-GBV cases. Therefore, when a patient presents with both limb and facial or cervical injuries, clinicians should suspect assault rather than an accidental fall. This study has two main limitations: first, those inherent to all retrospective studies, and second, its conduction during the COVID-19 pandemic, which included a period of mandatory lockdown that may have influenced both underreporting and overreporting of cases.[18-20] Recognizing the most frequent injury patterns and locations is useful for identifying patients at risk of being GBV victims—especially when the victim may not disclose the full history or details of the incident. Although this study does not aim to produce results generalizable to the entire population, it presents data from our hospital that may serve as a reference for future research.

ARTICLE INFORMATION

Conflict of Interest Disclosures: None reported.

Funding: The authors declare the non-existence of funding in relation to this article.

Ethical responsibilities: The authors have confirmed the maintenance of confidentiality and respect for the patient rights, agreement of publication, and transfer of rights to Revista Española de Urgencias y Emergencias.

Article not commissioned by the Editorial Board and with external peer review.

Note of the editors: This is a BOWMAN-generated English translation of the officially indexed Spanish-language article, which should be cited as Rev Esp Urg Emerg. 2024;3:96-103. In this translated version, the editors have supervised the process; however, it cannot be ruled out that some errors resulting from the artificial intelligence translation process may have gone unnoticed.

REFERENCES

1. Heikel AR, Rankin JA, Then KL. Intimate partner violence: A practice development issue for orthopaedic nurses. Int J Orthop Trauma Nurs. 2023;48:100998.
2. Violence against women prevalence estimates, 2018: global, regional and national prevalence estimates for intimate partner violence against women and global and regional prevalence estimates for non-partner sexual violence against women. Executive summary. Ginebra: Organización mundial de la salud; 2021. ISBN: CC BY-NC-SA 3.0 IGO.
3. Jefatura del Estado. Ley Orgánica 1/2004, de 28 de Diciembre, de Medidas de Protección Integral Contra La Violencia de Género. «BOE» núm. 313, de 29/12/2004.
4. Delegación del Gobierno contra la Violencia de Género, «Estadística de Víctimas Mortales por Violencia de Género. [En línea]. (Accessed 12 December 2024). Available at: https://violenciagenero.igualdad.gob.es/violenciaEnCifras/victimasMortales/fichaMujeres/home.htm
5. Boneta-Sádaba N, Tomás-Forte S, García-Mingo E. «Culpables hasta que se demuestre lo contrario. Percepciones y discursos de adolescentes españoles sobre masculinidades y violencia de género.», Centro Reina Sofía sobre adolescencia y juventud, Fundación Fad Juventud, 2023. DOI: 10.5281/zenodo.7797449.
6. Delegación del Gobierno contra la Violencia de Género., «XIII Informe Anual del Observatorio Estatal de Violencia sobre la Mujer 2019.» (Accessed 12 December 2024). [En línea]. Available at: https://violenciagenero.igualdad.gob.es/violenciaEnCifras/observatorio/informesAnuales/informes/XIII_Informe2019_Capitulos.htm
7. Wadman MC, Muelleman RL. Domestic violence homicides: ED use before victimization. Am J Emerg Med. 1999;17:689-91.
8. Loder RT, Momper L. Demographics and Fracture Patterns of Patients Presenting to US Emergency Departments for Intimate Partner Violence. JAAOS: Global Research and Reviews. 2020;4(2):e20.00009.
9. Della Rocca GJ, Tornetta P, Schneider PS, Sprague S. Intimate Partner Violence and Orthopaedics. Journal of Bone and Joint Surgery. 2019;101:e62.
10. PRAISE Investigators; Sprague S, Bhandari M, Della Rocca GJ, Goslings JC, Poolman RW, Madden K, et al. Prevalence of abuse and intimate partner violence surgical evaluation (PRAISE) in orthopaedic fracture clinics: a multinational prevalence study. Lancet. 2013;382:866-76.
11. Thomas R, Dyer GSM, Tornetta III P, Park H, Gujrathi R, Gosangi B,et al. Upper extremity injuries in the victims of intimate partner violence. Eur Radiol. 2021;31:5713-20.
12. Bhandari M, Dosanjh S, Tornetta P, Matthews D. Musculoskeletal Manifestations of Physical Abuse After Intimate Partner Violence. J Trauma. 2006;61:1473-9.
13. Wu V, Huff H, Bhandari M. Pattern of Physical Injury Associated with Intimate Partner Violence in Women Presenting to the Emergency Department: A Systematic Review and Meta-Analysis. Trauma Violence Abuse. 2010;11:71-82.
14. Gosangi B, Lebovic J, Park H, Thomas R, Gujrathi R, Harris M, et al. Imaging patterns of lower extremity injuries in victims of intimate partner violence (IPV). Emerg Radiol. 2021;28:751-9.
15. Gosangi B, Park H, Thomas R, Gujrathi R, Bay CP, Raja AS, et al. Exacerbation of Physical Intimate Partner Violence during COVID-19 Pandemic. Radiology. 2021;298:E38-E45.
16. Petridou E. What distinguishes unintentional injuries from injuries due to intimate partner violence: a study in Greek ambulatory care settings. Injury Prevention. 2002;8:197-201.
17. Spedding RL, McWilliams M, McNicholl BP, Dearden CH. Markers for domestic violence in women. Emerg Med J. 1999;16:400-2.
18. Albert A, Jacob J, Ruibal JC, Malchair P, Llopis F, Ferre C. Estudio de las diferentes causas de mortalidad en pacientes con COVID19. Cohorte HUBCOVID365. Rev Esp Urg Emerg. 2023;2:132-9.
19. Cajas-García M, Huanca-Choquehuanca E, Pillaca-Pullo O. Acerca de las características clínicas y evolución de pacientes con COVID-19 atendidos en servicios de urgencias españoles. Emergencias. 2021;33:486-7.
20. Miró O. Tras el tsunami del COVID-19, ¿de vuelta a la normalidad? Emergencias. 2022;34:1-2.