



Wound Patterns in Victims of Physical Abuse: A Retrospective Descriptive Analysis at Bhayangkara Sartika Asih Hospital, Indonesia

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Track Record Article	Abstract
<p>Revised: 08 July 2025 Accepted: 25 September 2025 Published: 30 September 2025</p> <p>How to cite : Rusman, A. A., Koswara, T., & Wibowo, J. C. (2025). Wound Patterns in Victims of Physical Abuse: A Retrospective Descriptive Analysis at Bhayangkara Sartika Asih Hospital, Indonesia. <i>Contagion : Scientific Periodical of Public Health and Coastal Health</i>, 7(2), 400–410.</p>	<p><i>Physical violence remains a global public health concern, with limited Indonesia-specific data on non-fatal injuries. This study aims to describe the characteristics of victims of physical abuse based on age, sex, and wound patterns using forensic medical reports to support public health strategies and forensic practices. A retrospective descriptive study was conducted using 150 Visum et Repertum (VeR) reports from living victims of physical violence treated at Bhayangkara Sartika Asih Hospital, Bandung, in 2022. Reports were selected through purposive sampling, including only those with complete documentation; cases involving deceased victims or unrelated to physical violence were excluded. Results showed that the most affected age group was 17–25 years (36.67%). Males represented the majority of victims (95.3%). The most common type of injury was bruises (34.52%), followed by abrasions (33.33%) and lacerations (21.03%). Among males, 83 (58%) sustained bruises, while among females, 5 (71%) had abrasions. Head injuries were predominant, with 30 cases (20%) having single wounds and 89 cases (59.3%) multiple wounds. These findings highlight the importance of targeted interventions for young males and suggest that injury surveillance systems should better capture non-fatal violence trends. The observed patterns may reflect social dynamics and risk behaviors prevalent in this demographic group, warranting further investigation</i></p> <p>Keyword: Physical Violence, Trauma, Wound Pattern, Forensic Medicine</p>

INTRODUCTION

Physical violence remains a persistent public health problem globally and nationally, contributing significantly to morbidity and long-term psychological and physical impairment. In forensic and clinical medicine, trauma refers to intentional bodily harm resulting from acts of interpersonal aggression, which often necessitates both medical attention and legal documentation (Okunlola et al., 2025). Understanding the patterns of such trauma (particularly in non-fatal cases) is essential not only for effective victim care but also for strengthening the medico-legal response system (Romero-Chacón et al., 2025).

In Indonesia, data related to physical violence is relatively limited in terms of injury typology and victim profiles. Based on the Indonesian National Crime Statistics Report in 2022 Syukriani et al., (2022), there were over 239.000 recorded criminal cases in the previous year. West Java was among the top provinces in reported violent crimes, with over 7.000 cases, of which approximately 2.000 were categorized as physical assault. However, this national data

often lacks granularity, such as wound descriptions and forensic classifications, especially in surviving victims.

The World Health Organization (WHO) in Rockowitz et al., (2024) has identified physical violence as a critical public health and social issue, particularly in low- and middle-income countries where the forensic infrastructure is often underdeveloped. Several international studies have highlighted the importance of analyzing wound patterns in victims of violence. For example, Filmalter et al. (2023) emphasized how detailed wound documentation supports forensic reconstruction and legal interpretation. Studies conducted in India (Roy et al., 2023), Mexico (Sandoval-Bonilla et al., 2025), and Singapore (Teo et al., 2023) demonstrated the public health benefits of integrating injury data into early intervention systems. However, such research remains scarce in the Indonesian context.

Unlike many high-income settings, Indonesia still faces challenges in standardizing forensic procedures, particularly with respect to *Visum et Repertum* (VeR) the official medical-legal report required for criminal investigations (Efendi et al., 2022; Puteri et al., 2025). Many hospitals issue VeRs routinely, but few have conducted systematic analyses of the data they contain, especially concerning wound typology, demographic patterns, or injury severity.

Considering the urgency of the issue, this study was conducted at Bhayangkara Sartika Asih Hospital in Bandung, West Java, one of the regional referral centers for forensic medical examination. In 2022, the hospital processed a significant number of VeR cases involving physical violence, indicating a growing burden of interpersonal aggression in the area. Despite the routine issuance of VeRs, no retrospective, descriptive study has yet explored the wound patterns recorded at this institution. This represents a gap in local forensic research and an opportunity to strengthen evidence-based practices.

Therefore, this study aims to describe the characteristics of physical violence victims, specifically in terms of age, gender, and wound patterns based on 2022 VeR reports at Bhayangkara Sartika Asih Hospital. The results are expected to enhance institutional forensic capacity, support the development of targeted violence prevention strategies, and assist law enforcement and judicial authorities in the accurate interpretation of injury evidence.

METHODS

This study employed a retrospective descriptive design with secondary data from 150 *Visum et Repertum* (VeR) reports of physical violence victims issued at Bhayangkara Sartika Asih Hospital, Bandung, from January to December 2022. The sample was purposively selected, with inclusion criteria of living victims aged ≥ 12 years, with documented physical

injuries and complete demographic data. Reports of deceased victims, non-violent cases, or incomplete files were excluded. Data were manually extracted using a structured spreadsheet, including variables such as age, gender, type, number, and anatomical location of injuries. Two researchers coded independently, with discrepancies resolved through consensus with a senior forensic physician, and double-checking to minimize transcription errors.

Operational definitions were applied to maintain consistency in the analysis, including age category (adolescent to elderly), injury type (contusion, abrasion, laceration, incision, fracture, gunshot wound), number of injuries (single or multiple), and anatomical location based on WHO guidelines. Descriptive statistical analysis (frequency and percentage) and cross-tabulations were used to describe the distribution of injuries based on demographic variables, using SPSS version 26.0. This study was approved by the Research Ethics Committee of Jenderal Achmad Yani University (No. 055/UMI.10/2023). To maintain confidentiality, all identities were removed and data were stored in password-protected electronic files. The potential for selection bias and variations in documentation by forensic examiners are acknowledged as limitations of this study.

RESULTS

This study analyzed a total of 150 *Visum et Repertum* (VeR) reports of physical violence cases involving living victims examined at Bhayangkara Sartika Asih Hospital, Bandung, during the year 2022. The inclusion criteria required each report to contain complete demographic information and detailed documentation of physical injuries. The data were presented descriptively to reflect victim characteristics and wound patterns based on age, gender, injury type, and anatomical location.

Of the 150 *Visum et Repertum* reports analyzed, the majority of victims of physical violence were male (95.3%), with the largest proportion coming from the 17–25 age group (36.7%), followed by 26–35 years (33.3%), and 36–45 years (20%), so that more than 90% of cases affected young adults. Analysis of injury types showed that bruises (34.5%), abrasions (33.3%), and lacerations (21%) were the most dominant findings, while cuts, fractures, incised wounds, and gunshot wounds were relatively rare. This pattern confirms that physical violence in Bandung in 2022 was primarily experienced by young men with multiple injuries caused by blunt objects, while cases in women and other age groups were relatively rare.

Table 1. Type of Injuries Observed

Injury Type	Frequency (n)	Percentage (%)
Bruise	87	34.52
Abrasion	84	33.33
Laceration	53	21.03
Incision	20	7.93
Fracture	4	1.58
Chop wound	3	1.19
Gunshot wound	1	0.39
Others (burns, acid, etc.)	0	0.00
Total	252	100.00

**Note: Total exceeds 150 due to multiple injuries per victim*

The three main types of injuries found were contusions (34.5%), abrasions (33.3%), and lacerations (21.0%), which together accounted for nearly 90% of all cases, while cuts, fractures, and gunshot wounds were very rare. This pattern indicates a predominance of blunt trauma resulting from punches, kicks, or impacts with hard objects, with a small percentage of lacerations associated with sharp objects. Many victims had more than one type of injury, so data were coded per injury to capture the complexity of the trauma. These findings align with studies in India and Singapore that also highlighted blunt trauma as the primary cause, in contrast to reports from Nigeria and Mexico that found a higher prevalence of penetrating trauma, reflecting cultural differences and access to weapons.

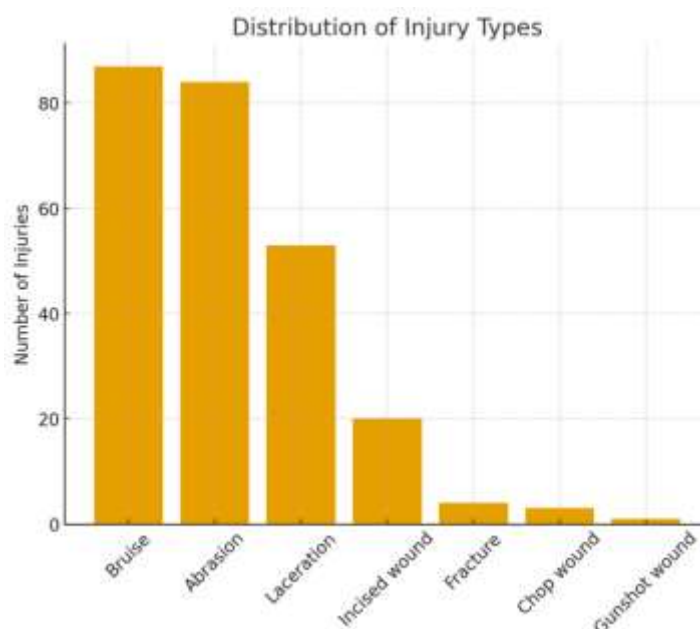
**Figure 1. Bar chart of injury types**

Figure 1 highlights how bruises, abrasions, and lacerations tower over other categories. The visualization reinforces the interpretation that violence in Bandung is primarily characterized by physical assault with body force or blunt objects, rather than weapons.

To explore whether injury patterns differed between groups, cross-tabulations were performed (Schuster et al., 2024). Table 2 presents a comparative breakdown of injury types by gender. Among male victims, the most frequent injuries were bruises (83 cases), abrasions (79 cases), and lacerations (51 cases). Incised wounds, chop wounds, and the single gunshot wound were all reported in male victims only. Among female victims, abrasions were recorded in 5 cases, bruises in 4 cases, and lacerations in 2 cases. One female sustained a fracture.

Table 2. Injury Types by Gender

Injury Type	Total	Male	Female	Percentage (%)
Bruise	87	83	4	34.52
Abrasion	84	79	5	33.33
Laceration	53	51	2	21.03
Incision	20	20	0	7.93
Fracture	4	3	1	1.58
Chop wound	3	3	0	1.19
Gunshot wound	1	1	0	0.39
Total	252	240	12	100.00

Although abrasions appeared proportionally more frequent among females, and incised or firearm injuries occurred only in males, statistical testing showed no significant gender differences ($\chi^2 = 5.19$, $p = 0.52$). Among males, bruises and abrasions were most common, while females more frequently sustained abrasions (71%) and bruises (57%). Interestingly, sharp-force injuries were exclusively found among males. However, these apparent differences were not statistically significant, as shown later in the inferential analysis. Table 3 summarizes injury type by age group.

Table 3. Injury type by age group

Age group	Bruise	Abrasion	Laceration	Incised	Others
12–16	0	1	0	0	0
17–25	30	28	12	5	2
26–35	28	28	10	7	1
36–45	18	17	20	5	1
46–55	6	5	5	2	0
56–65	4	4	5	1	0
>65	1	1	1	0	0

Younger victims (17–35 years) more frequently sustained bruises and abrasions, while lacerations appeared relatively more common among older victims. Still, statistical testing revealed no significant differences between groups.

The anatomical location of injuries was recorded and categorized as “none,” “single,” or “multiple” per body region, as shown in Table 4. The head was the most frequently injured area, with 30 victims experiencing single injuries and 89 suffering multiple head injuries. Only 31 victims had no head injuries. The upper extremities were the next most commonly affected,

followed by the lower extremities, back, neck, and abdomen. No injuries were found in the buttocks, genitals, or anal region.

Table 4. Anatomical Location of Injuries

Body Region	None	Single	Multiple	Total (%)
Head	31	30	89	100
Neck	133	11	6	100
Thorax	143	7	0	100
Abdomen	143	5	2	100
Back	135	10	5	100
Waist	146	4	0	100
Buttocks	150	0	0	100
Genitals	150	0	0	100
Anus	150	0	0	100
Upper Extremities	88	30	32	100
Lower Extremities	122	16	12	100

The anatomical site of injuries offers further insight into the dynamics of violence.

Table 5 presents the distribution by gender.

Table 5. Anatomical site of injuries by gender

Anatomical site	Male	Female
Head	116	3
Upper extremities	61	1
Lower extremities	27	1
Back	15	0
Neck	17	0
Thorax	7	0
Abdomen	7	0

The head was the most frequently injured region, accounting for nearly 80% of victims. The upper extremities were second (41.3%), followed by lower extremities (18.7%). Injuries to the back, neck, thorax, and abdomen were less common. No genital or anal injuries were documented. Figure 2 illustrates anatomical sites by gender.

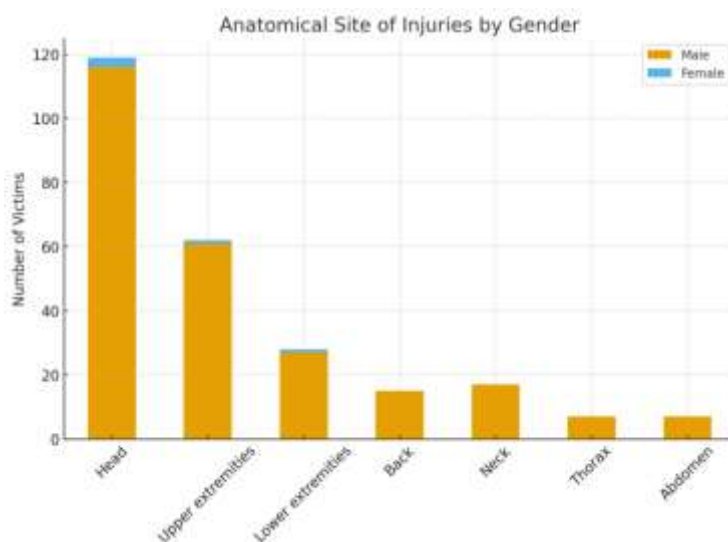


Figure 2. Stacked bar chart of anatomical sites by gender

Figure 2 shows that head injuries dominate in both male and female victims, followed by upper extremities. The similarity across genders is striking and consistent with statistical findings of no significant difference. The concentration of trauma on the head suggests intentional targeting of vital regions, often with the intent to disable or subdue victims. In summary, anatomical analysis reinforces the earlier finding that violence was directed predominantly at the head and arms, consistent across genders.

To examine whether injury patterns differed by gender and age, we conducted Chi-square tests of independence. There was no significant association between gender and injury type ($\chi^2 = 5.19$, $df = 6$, $p = 0.52$), nor between gender and anatomical site ($\chi^2 = 1.53$, $df = 6$, $p = 0.96$). Similarly, age group and injury type showed no significant association ($\chi^2 = 21.28$, $df = 36$, $p = 0.98$). Chi-square tests were performed to evaluate whether observed differences were statistically significant. The results are summarized in Table 6.

Table 6. Summary of Chi-square test results

Comparison	χ^2	df	p-value	Interpretation
Gender \times Injury type	5.19	6	0.52	Not significant
Gender \times Anatomical site	1.53	6	0.96	Not significant
Age group \times Injury type	21.28	36	0.98	Not significant

Chi-square test results showed no significant differences in injury type or location patterns based on gender and age. The distribution of injury types was similar between males and females ($\chi^2 = 5.19$; $p = 0.52$), although abrasions were more common in females, and cuts or gunshot wounds were found only in males. Similarly, the distribution of anatomical injuries did not differ significantly ($\chi^2 = 1.53$; $p = 0.96$), with head injuries predominating in both genders. Analysis by age also showed no significant differences ($\chi^2 = 21.28$; $p = 0.98$), although bruises and abrasions were more common in younger victims and lacerations were slightly more common in older age groups. Thus, although younger males were more frequently victimized, the types and locations of injuries were relatively consistent across groups.

These findings have important limitations, including the use of data from a single hospital, potential selection and reporting bias, and variations in forensic physician documentation. The absence of certain injury categories, such as stab wounds or trauma related to sexual assault, does not necessarily indicate a true absence, but rather a possible omission from documentation. The local context of Bandung is also relevant, given that the city recorded over 1,280 reported cases of physical violence in 2022, ranking third in West Java. This figure is estimated to underestimate the true burden due to stigma and barriers to reporting, particularly among women and vulnerable groups.

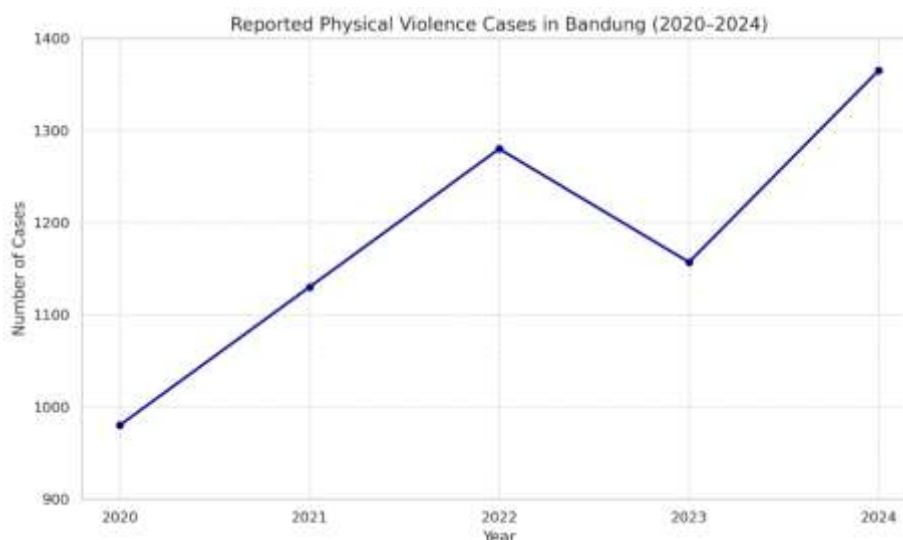


Figure 3. Trend of Reported Physical Violence Cases in Bandung City (2020–2024).
(Source: BPS-STATISTICS INDONESIA, City of Bandung)

The figure illustrates a rising trend in reported physical assault cases over a five-year period, with a notable increase in 2022 and 2024. This escalation aligns with the growing urban density and social tensions in Bandung, thereby reinforcing the need for improved clinical forensic documentation, particularly in referral hospitals such as Bhayangkara Sartika Asih. These trends emphasize the relevance of strengthening early identification systems and violence surveillance protocols at the city and provincial levels. This study shows that physical violence in Bandung is dominated by blunt force trauma, particularly bruises and abrasions to the head and upper extremities, with the majority of victims being young men aged 17–35. This injury pattern is consistent with interpersonal violence in public spaces, such as street fights or alcohol-related incidents, and differs from patterns of gender-based violence, which are often characterized by stab wounds or burns. These findings highlight the need for improved forensic documentation standards, training of medical personnel in injury pattern recognition, and integration of violence surveillance systems between hospitals, police, and health authorities to strengthen legal responses and public health policies.

DISCUSSION

This study found a predominance of head injuries, reflecting a pattern of physical attacks directed at vital areas to incapacitate the victim. The most common injuries were abrasions and bruises, consistent with the characteristics of violence in public spaces, which generally involve bare hands or blunt objects, rather than sharp weapons. This pattern aligns

with findings from international forensic studies that indicate the head is the most vulnerable target in interpersonal violence.

However, the limited data in the *Visum et Repertum* documents makes analysis of motives, weapons used, or relationships with perpetrators speculative. As with studies in other countries, descriptions of injuries without investigative or social data create an incomplete picture of the context of the violence (Chakraborty & Jungari, 2025; Creamer et al., 2025). Furthermore, the retrospective nature of this study creates potential bias in recording and representing victims.

The predominance of male victims, particularly those aged 17–25, is related to sociocultural norms that encourage confrontational and risky behavior among young people. Conversely, the low number of female victims likely reflects barriers to reporting due to stigma, economic dependence, and distrust of authorities (Wieberneit et al., 2024). The phenomenon of underreporting of women is also found in many other countries, indicating structural challenges in violence prevention (Meda et al., 2025; Muzingili et al., 2024; Poletini et al., 2024).

From a global perspective, differences in injury patterns are also evident. The absence of stab wounds or sharp objects in this study contrasts with reports from India or Nigeria, which indicate variations in weapon access, combat culture, and police strategies (Ogbuanya et al., 2023). These findings have clinical and legal implications, particularly in encouraging medical personnel to detect patterns of non-fatal injuries, strengthen forensic documentation, and prepare legal evidence in accordance with WHO guidelines.

The study's limitations underscore the need for a more comprehensive approach in the future. Integrating medical records, police data, judicial outcomes, and interviews with survivors would enrich our understanding of patterns of violence. Therefore, this study underscores the importance of cross-sector collaboration to ensure victims of violence receive evidence-based, dignified medical, legal, and social protection.

CONCLUSIONS

The results of this study indicate that the injury patterns of victims of physical abuse at Bhayangkara Sartika Asih Hospital are dominated by head trauma and blunt force injuries, particularly in young men aged 17–25 years. These findings illustrate the social dynamics and risk behaviors in an urban context, and demonstrate patterns of non-fatal violence that differ from reports in other regions. This study makes an important contribution to enriching empirical forensic data in Indonesia, particularly regarding the documentation of non-fatal

injuries, which are still rarely reported. Implications include improving forensic examination standards, training for medical personnel, and inter-institutional collaboration to strengthen Visum et Repertum documentation. Further studies are recommended to integrate medical data with police and court reports, and examine the social and psychosocial factors of survivors, to support more comprehensive prevention and intervention strategies.

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