Characteristics of Victims of Interpersonal Violence Presented to Emergency Department, Teaching Hospital, Karapitiya

Wijenayaka PRC*[1], Wijesinghe CJ[2], Ruwanpura PR[1]

[1]Office of the Judicial Medical Officer, Teaching Hospital Karapitiya, Galle, Sri Lanka
[2]Department of Community Medicine, Faculty of Medicine, University of Ruhuna, Sri Lanka

Abstract

Introduction: Violence is a universal phenomenon and timely data is of paramount importance in prevention through community interventions.

Objectives: To identify predispositions of interpersonal violence, injury characteristics, and outcomes of victims presented to the emergency department (ED) of Teaching Hospital, Karapitiya (THK).

Methodology: A cross-sectional study was conducted among 385 victims of interpersonal violence admitted to ED, THK using an interviewer-administered questionnaire and medical documents which were analysed using SPSS. The mental state of victims was assessed using MMSE.

Results: The majority was male (77%), aged 30-49 years (36%), and from lower social classes (77%). The commonest places of violence were home (28%) and community (26%). The majority reported physical/verbal violence (96%). Sexual violence was less common (2%) and significantly associated with female-gender (p=0.001). The frequent assailant was an acquaintance (65%). The commonest reasons were property (33%) and financial (31%). The commonest weapon was blunt objects (81%) and the least common was firearms (1%). Common predispositions were peer (49%) and alcohol (37%) related, while 27% had kids with criminal records. Contusions (40%) were the most prevalent injury followed by abrasions (33%). Head and face (41%) and upper limbs (38%) were common sites. The commonest category of hurt (COH) was non-grievous (61%) followed by grievous (24%), Fatal (FIOCN) (3%), and endangering (1%). Approximately, 45% underwent surgeries, 2% were admitted to ICU and 1% died. COH was significantly associated with the mental state (p<0.001) and smelling of alcohol (p=0.002).

Conclusion: Physical/verbal-violence was common in males, whereas sexual-violence was strongly associated with females. A considerable proportion had grievous injuries which were significantly associated with mental state.

Keywords: interpersonal violence, category of hurt, MMSE

Received: 24 May 2023, **Revised version accepted:** 26 June 2023, **Published**: 30 June 2023. ***Corresponding author:** Wijenayaka PRC, Email: roshelclaude@gmail.com https://orcid.org/0000-0003-2071-8362

Cite this article as: Wijenayaka PRC, Wijesinghe CJ, Ruwanpura PR. Characteristics of Victims of Interpersonal Violence Presented to Emergency Department, Teaching Hospital, Karapitiya. Medic-Legal Journal of Sri Lanka. 2023;11(1):13-19. DOI: https://doi.org/10.4038/mljsl.v11i1.7473

Introduction

Interpersonal violence is simply the violence between individuals and is defined as 'the intentional use of physical force or power, threatened or actual, against another person or against a group or community that results in or has a high likelihood of resulting in injury, death, psychological harm, mal-development or deprivation'.[1] It could be among family, intimate partners, or community. Family violence includes child abuse, partner violence, and elderly abuse. Community violence can be divided into acquaintance and stranger violence. It includes youth violence, assault by strangers, violence related

to property crimes, and violence in the workplace/institution. [2]

Violence causes more than 1.6 million deaths around the world each year.[3] Though quantification of the effect of non-fatal violence is not evident, as fatal injuries it does impose a significant impact on physical, psychological, economic, and social aspects. None of the communities do have the pride of claiming zero cases of violence, it being a universal phenomenon and inevitable.

According to the literature, different patterns of interpersonal violence have been noted round the world emphasizing the fact that culture too is a contributory factor.[3] It is seen that youth violence is marked in Africa and Latin America. Incidence of child marriages and trafficking are reported higher in Africa and South Asia. However, violence against children or the elderly and intimate partner violence are commonly seen in almost all countries. [4.5]

The predictors of violence are multifactorial as it has been described by the ecological model. Violence is the outcome of the reaction between these risk factors and protective factors. Four different levels are described, identifying factors related to the individual, relationships, community, and society. [6,7,8] Male gender, youth, substance abuse, early exposure to violence, history of violence, and personality disorders are risk factors associated with the individual.[9] Intimate partner violence, household members with criminal records, harsh, cold, or inconsistent parenting, and low socioeconomic status are the risk factors relating to relationships. Risk factors related to the community are high residential mobility, high unemployment, high population density, poverty, drug trade, and inadequate victim care services while economic and gender inequality, societal norms that support violence, poor rule of law, weak criminal justice system and availability of lethal means (e.g., firearms) are the societal factors associated with interpersonal violence.[9]

Interpersonal violence also imposes a heavy burden directly on the cost of health care especially in developing countries which will invariably make it a public health priority. Concomitantly national as well as local economies will be threatened while draining the human capital which results in retarding the development of the country.[10] As a consequence, minimizing the inequality among the population will be unachievable which will again seeds violence.[11,12] This is the reason that the World Health Organization (WHO) identified violence as a public health priority in 1996 and they also did include specific targets to eliminate interpersonal violence in United Nations post-2015 Action agenda for sustainable development.[12]

Since the WHO recognised violence as a public health priority, studies looking into the gravity of this issue were designed worldwide. Several studies have been conducted in Sri Lanka also mainly on intimate partner violence rather than interpersonal violence. The second highest prevalence of intimate partner violence is seen in South Asia according to Devries et al. [13]

There are several legal provisions in Sri Lanka which covers interpersonal violence. Article 12 of the 1978 Constitution has guaranteed legal egalitarianism while Chapter three of 1987 Constitution has considered human rights as fundamental rights.[14,15] Moreover, the Penal Code of Sri Lanka considers sexual assault, rape, extortion, and intimidation as criminal offences.[16] In 1997, the Human Rights Commission of Sri Lanka was established by the Human Rights Commission Act No.21 of 1996.[17] A new act was passed in 2005 in order to prevent domestic violence as Prevention of Domestic Violence Act.[18]

Thus, it is convincing that we need public health interventions in order to prevent interpersonal violence. This can be achieved by identifying and addressing the associated common risk factors and protective factors. Based on those findings specific violence prevention programmes and policies can be implemented. In order to do so targeting, identifying, monitoring, and evaluating those interventions are essential.[19] Therefore, it is evident that policymakers need a substantial amount of knowledge on violence. They should have the accessibility to accurate and timely data. Extensive analysis of reliable data is the cornerstone for such policies. Such research appreciating interpersonal violence in Sri Lanka are minimum and has mainly focused only on intimate partner violence which compelled the authors of this study to fill that gap in the literature.

Methodology

A descriptive cross-sectional design was used, and the study setting was the Emergency Department, Teaching Hospital, Karapitiya (THK). Study participants were the patients presented to the emergency department THK following interpersonal violence. Consecutive sampling was used, and the sample size was 385, calculated based on the formula for estimating a population proportion [$N = Z^2 P (1-P) / d^2$] considering a Z value of 1.96 and an absolute precision (d) of 5%. As multiple proportions were

estimated, the anticipated population proportion (P) of the characteristic of interest was considered as 50% to achieve the maximum value for the minimum sample size.

The study was conducted after obtaining ethical approval from the Ethical Review Committee, Faculty of Medicine, Galle (2020.P.136). The permission of the Director, Teaching Hospital Karapitiya was obtained prior to data collection. Patients who were admitted to the emergency department as a result of interpersonal violence were included in the study and those who were unable to effectively communicate were excluded. Once the eligible patients were identified, informed written consent was obtained from them on a printed consent form. In case of a patient less than 18 years of age, consent from the parents, as well as the patient, was obtained.
Data collection was done using an interviewer-administrated questionnaire and a data extraction sheet. The questionnaire was designed to identify the demographic profiles of victims, details of the incident of interpersonal violence, the injury characteristics and outcome along with the predisposing factors. Mini-Mental State Examination (MMSE) was used to assess the mental state of the victims of violence. Details were collected from the patients and the relevant findings were extracted from the medical records by the investigators.

Data were analysed using SPSS statistical software and the Chi-square test was used to assess the associations between variables. A level of probability of 0.05 was used in all analyses.

Results

The majority of the study participants were males (n= 298, 77%), Sinhalese (n=357, 93%), and Buddhists (n=340, 88%). The mean age (SD) of the population was 38.8 years and the maximum number of patients were in the age group of 30 to 49 years (36%). Children represented 10% of the sample while 1% was above the age of 80 years.

Most of the patients (77%) belonged to the lower social class (manual workers or unemployed). There were fewer patients from the semi-professional (6%) and professional (2%) social class categories and 29% were unemployed. The majority had completed post-primary education (65%) and only 1% had no formal education.

Those who had peers and family members with criminal records were 49% and 27% respectively. Most of the victims (85%) had admitted primarily because of the injuries sustained while the rest was for legal purposes. Half (50%) of the victims were admitted by family members and in 6 (2%) occasions by the assailant.

The commonest places of violence were home (28%) and community (26%) followed by neighbourhood (22%), workplace (13%), and streets (12%). The majority has suffered physical and verbal violence (96%), while 3% suffered physical violence only. Sexual and physical violence were noted as 0.8% and 1% had suffered multiple types of violence. Female gender was significantly associated with sexual violence (p=0.001).

The majority of violence has taken place from noon to 6 p.m. (47%) and 6 p.m. to midnight (35%) while the least number of violence was recorded from midnight to 6 a.m. (3%). The assailant was identified as an acquaintance (65%), partner (15%), family member (12%), stranger (7%) and law enforcement (2%). Figure 1 shows the frequency of the types of assailants.

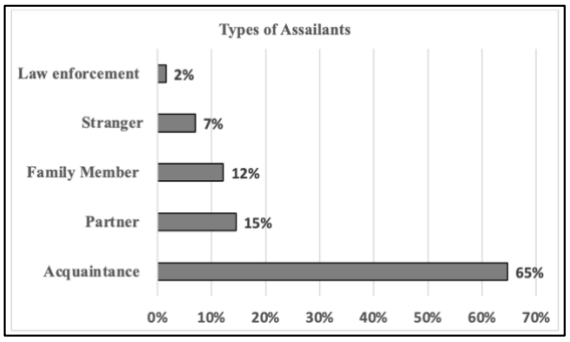

Figure.1. Types of Assailants

The commonest reasons for violence were property disputes (33%) and financial matters (31%). Figure 2 shows the reasons for violence.

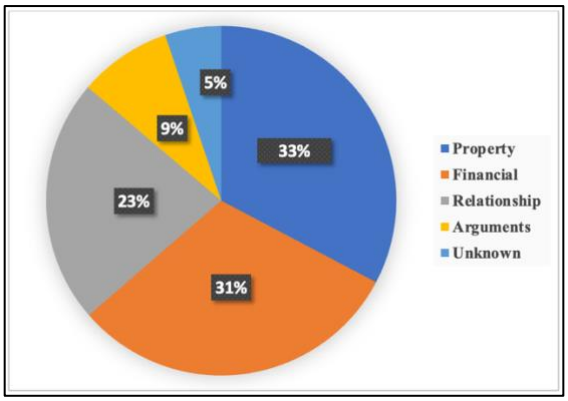

Figure.2. Reasons for violence

The most common weapon used was a blunt weapon (81%) and the least common was firearm (1%). The usage of sharp weapons was 12%. The most frequent blunt weapon was limb followed by wooden pole. The commonest sharp weapon was knife and the least was axe. Table 1 shows the frequency of the type of weapons used.

Table.1. Types of blunt weapons used

Type of blunt weapon	N=311 n (%)
Limb	103 (33)
Wooden pole	94 (30)
Iron bar	22 (07)
Stones	19 (06)
Helmet	12 (04)
Broken glass	03 (01)
Teeth	03 (01)
Mamoty	03 (01)

Victims who did not have injuries were 11% and 56% had a single type of injury while the rest had more than one type of injury. The most prevalent injury was contusion (40%) followed by abrasion (33%), fracture (21%), laceration (18%), and cut (14%). Most of the injuries were seen over the head and face (41%) and upper limbs (38%) while the least number of injuries were seen over the genitals (0.3%).

Table.2. Types of injuries

Injury Type	N=496 n (%)
Contusions	150 (40)
Abrasions	126 (33)
Fractures	78 (20)
Lacerations	69 (18)
Cuts	53 (14)
Stabs	07 (02)
Bites	05 (01)
Firearm	04 (01)
Dislocations/Subluxations	04 (01)

Regarding the category of hurt 61% were non-grievous, 24% were grievous, 3% were fatal in the ordinary course of nature and 1% were endangering. Regarding the fate of the victims, 46% underwent surgical interventions, 2% were admitted to ICU and 1% died during the stay.

The majority of the victims showed normal cognition (89%) and only 11% showed mild or moderate cognitive impairment according to MMSE. There was a significant association between the category of hurt of grievous and above with impairment of MMSE ($p<0.001$).

Regards to risk factors 24% were smelling and 13% were under the influence of alcohol. Approximately 60% of the victims were alcohol users, while 18% were recreational drug users. A significant association was observed between the category of hurt of above grievous with smelling of alcohol ($p=0.002$). Among the participants, 44% had at least one previous hospital admission due to violence and 17% had at least one legal proceeding due to previous violence. Nearly 5% of the victims of violence carried a diagnosis of mental disease. While 83% of victims showed their willingness for legal proceedings others refused legal action, the commonest reason being lack of interest (71%). The least common reason for avoiding legal proceedings was financial problems (3%).

Discussion

Interpersonal violence has not been studied extensively by Sri Lankan researchers though they have studied sub-sections of it such as intimate partner, domestic and elderly violence as well as child abuse.

Interpersonal Violence was commonly observed among respondents from certain socio-demographic backgrounds in our study. Male predominance was noted among the victims, and it was more or less the same as in a study conducted in Denmark (78%).[20] The commonest age group was identified as 30-49 years though the global figures show more violence among adults less than 30 years. It was interesting that 15% were admitted to the hospital not primarily because of the injuries but for initiating legal actions. It could be because of the idea that hospitalization adds gravity to the legal proceedings. It was revealed that most of the incidents of violence has taken place in home and community which might be attributed to the nature of the assailant.

The majority of the victims had suffered physical and verbal violence (96%), while 3% suffered physical only which contrasts to a study conducted in Peradeniya, where physical violence only was found in 72% while physical and verbal violence was 15%.[21] In contrast, the prevalence of multiple violence was fairly similar in both studies. Female gender was significantly associated with sexual violence which is in keeping with global statistics.[22]

It was found that the majority of the violence occurred between 12 p.m. to 6 p.m. followed by 6 p.m. to 12 a.m. According to the statistics released by the Department of Justice, Federal Bureau of Investigation in the United States (2022), more than one-third of reported violence has occurred between 12 p.m. to 5 p.m. followed by 5 p.m. to 11 p.m. which is compatible with our findings.[23] Reasons for such variation have to be studied further using appropriate research.

Analysis of assailants in our study showed that the commonest assailant is an acquaintance (65%), and the prevalence of intimate partner violence was 15%. According to a study done in South Africa, the commonest assailant was an unknown person (32%) and acquaintance was only 13%.[24] Intimate partner violence in their study was 28% which is higher than our observations. Interestingly, both studies could identify law enforcement as assailants and the percentage was 2%. According to a study done in Batticaloa regarding family violence, it was found that the common reasons which lead to violence were arguments (68%) and financial problems (17%), whereas in our study they were property disputes (33%) and financial matters (31%).

The most prevalent injury in our study was contusion (40%) followed by abrasion (33%), fracture (21%), laceration (18%), and cut (14%). In the above said study, it was contusion (64%) followed by fracture (19%), abrasion (15%) and stab (2%).[25] Most common weapon used was blunt (81%) and the least common was firearm (1%) in our study. In a study conducted in Queen Elizabeth Central Hospital, which is a tertiary care facility in Malawi, it was found that 55% and 25% of victims had suffered blunt trauma and sharp force trauma respectively, while only a single case of the forearm was reported.[26]

Regarding the category of hurt 61% were non-grievous, 24% were grievous, 3% were fatal in the ordinary course of nature and 1% were endangering. In the study at Queen Elizabeth Central Hospital, 74% had non-grievous injuries while 9% had grievous injuries. Regarding the fate of the victims 46% underwent surgical interventions, 2% were admitted to ICU and 1% died during the stay whereas in their study only 11% were warranted in ward care and 0.1% expired.[26]

In our study, we assessed the mental state of the victims which has not been discussed in previous studies. The majority of the victims showed normal cognition (89%) and only 11% showed mild or moderate cognitive impairment. The significant association noted between the category of hurt and MMSE score pointed towards deteriorating mental state with the higher categories of hurt.

Our study revealed that low levels of education, unemployed and manual workers, hence consistent with known risk factors. Though greater proportion of victims were from lower socio-economic classes it could be a result of limiting our study to a public health service facility which offers free health care, may have attracted financially disadvantaged groups. Therefore, the lack of a comparative sample with no exposure to violence from a conclusion is a limitation in our study. Nearly half of the population had peers with criminal records which also appears to be a significant pre-disposing factor.

We could also identify smelling and being under the influence of alcohol as already defined risk factors for violence among the victims. It was important to highlight that almost three-fifths of the victims were alcohol users while 18% were recreational drug users. There is well known reciprocal relationship with alcohol and recreational drug usage with violence.[27] Apart from that we could elicit a significant association between the category of hurt and the smelling of alcohol, higher category of hurt being reported among those smelling of alcohol.

It was found that more than four-fifth of our victims wanted to proceed with legal actions regards to the incidents of violence they had experienced, and it may reflect that they have faith and knowledge about the prevailing law in Sri Lanka. However, the exact reasons for not proceeding or proceeding with legal actions are yet to be studied in future studies.

Limitations of the study

There would be selection bias, which arises from limiting the sample to a public sector healthcare facility instead of community-based study. Probably a number of victims belonging to higher category of hurt were not included in the study since we had to exclude patients who cannot effectively communicate.

Conclusion

Interpersonal violence was common in males, aged between 30 to 49 years from lower social classes. Physical and verbal violence was common in males whereas sexual violence was strongly associated with the female gender. The frequent assailant was an acquaintance and had used blunt weapons commonly. Contusions were the most prevalent injury and most of the injuries were over the head and face. A considerable proportion of victims had

grievous injuries which were significantly associated with impaired mental state. Nearly a quarter of the victims were positive for alcohol smell on admission, which was significantly associated with the category of hurt.

Ethics statement

Ethical approval was not obtained as secondary data were analyzed in this study. Data were anonymized and irreversibly de-identified. Written approval for the study was also obtained by the Birth and Death Register of Matale, and the Divisional Secretariat of the above areas.

Acknowledgments

Dr. M Jayasingha of District General Hospital, Matale, Sri Lanka is gratefully acknowledged for the assistance provided during the data collection.

Disclosure statement

Conflicts of interests: The author declares that he has no conflicts of interest.

Funding: None

References

1. Heath I. Treating violence as a public health problem. BMJ. 2002;325(7367):726-7.
2. Rutherford A, Zwi AB, Grove NJ, Butchart A. Violence: a glossary. Journal of Epidemiology & Community Health. 2007;61(8):676-80.
3. Krug EG, Mercy JA, Dahlberg LL, Zwi AB. The world report on violence and health. The Lancet. 2002;360(9339):1083-8.
4. Subramanee SD, Agho K, Lakshmi J, Huda MN, Joshi R, Akombi-Inyang B. Child Marriage in South Asia: A Systematic Review. International Journal of Environmental Research and Public Health. 2022;19(22):15138-42.
5. Mikton CR, Tanaka M, Tomlinson M, Streiner DL, Tonmyr L, Lee BX, Fisher J, Hegadoren K, Pim JE, Wang S-JS, MacMillan HL. Global research priorities for interpersonal violence prevention: a modified Delphi study. Bulletin of the World Health Organization. 2016;95(1):36-8.
6. Grufman M, Berg-Kelly K. Physical fighting and associated health behaviours among Swedish adolescents. Acta Paediatrica. 1997;86(1):77-1.
7. Grunbaum JA, Kann L, Kinchen S, Ross J, Hawkins J, Lowry R, Harris WA, McManus T, Chyen D, Collins J. Youth Risk Behavior Surveillance - United States, 2003 (Abridged). Journal of School Health. 2004;74(8):307-24.
8. Kaplan SJ, Pelcovitz D, Labruna V. Child and Adolescent Abuse and Neglect Research: A Review of the Past 10 Years. Part I: Physical and Emotional Abuse and Neglect. Journal of the American Academy of Child & Adolescent Psychiatry. 1999;38(10):1214-22.
9. Mock CN, Nugent R, Kobusingye O, Smith KR. Disease Control Priorities. 3rd ed. Washington (DC): World Bank Publications; 2017. (Injury Prevention and Environmental Health: Key Messages from Disease Control Priorities; vols. 7).
10. Matzopoulos R, Bowman B, Butchart A, Mercy JA. The impact of violence on health in low- to middle-income countries. International Journal of Injury Control and Safety Promotion. 2008;15(4):177-8.
11. Wilkinson R. Why is Violence More Common Where Inequality is Greater? Annals of the New York Academy of Sciences. 2006;1036(1):1-12.
12. Fallah Shayan N, Mohabbati-Kalejahi N, Alavi S, Zahed MA. Sustainable Development Goals (SDGs) as a Framework for Corporate Social Responsibility (CSR). Sustainability. 2022;14(3):1222-9.
13. Devries KM, Mak JYT, García-Moreno C, Petzold M, Child JC, Falder G, Lim S, Bacchus LJ, Engell RE, Rosenfeld L, Pallitto C, Vos T, Abrahams N, Watts CH. The Global Prevalence of Intimate Partner Violence Against Women. Science. 2013;340(6140):1527-8.
14. Hoole R. Sri Lanka: Ethnic Strife, Fratricide, and the Peace vs. Human Rights Dilemma. Journal of Human Rights Practice. 2009;1(1):120-39.
15. Gomez M. Sri Lanka. Human Rights Quarterly. 1998;20(2):281-02.
16. Niriella M. A Critical Analysis on the Application of the Legal Principle of Rule of Law in the Criminal Justice System of Sri Lanka. Forensic Research & Criminology International Journal. 2017;4(3):84-90.
17. Matthews B. The Limits of International Engagement in Human Rights Situations: the Case of Sri Lanka. Pacific Affairs. 2009;82(4):577-96.
18. Edirisinghe EA. Policing in Domestic Violence Act in Sri Lanka. International Journal For Multidisciplinary Research. 2022;4(4):488-96.
19. Florence C, Shepherd J, Brennan I, Simon TR. An economic evaluation of anonymised information sharing in a partnership between health services, police and local government for preventing violence-related injury. Injury Prevention. 2013;20(2):108-14.
20. Brink O, Vesterby A, Jensen J. Pattern of injuries due to interpersonal violence. Injury. 1998;29(9):705-9.
21. N. Vadysinghe A, Edussuriya D, R. Y. Lakma M. A Study of Injury Patterns and Socio-Demographic Profiles of Victims of Intimate Partner Violence in Sri Lanka. Arab Journal of

Forensic Sciences & Forensic Medicine. 2018;1(8):1025-33
22. Ebert C, Steinert JI. Prevalence and risk factors of violence against women and children during COVID-19, Germany. Bulletin of the World Health Organization. 2021;99(6):429-38.
23. Hendrix JA, Planty MG, Cutbush S. Leakage warning behaviors for mass school violence: An analysis of tips reported to a state school safety tip line. Journal of Threat Assessment and Management. 2022;9(1):33-1.
24. Mitra A, Okafor UB, Kaswa R, Adeniyi OV. Epidemiology of interpersonal violence at a regional hospital emergency unit in the Eastern Cape, South Africa. South African Family Practice. 2022;64(1):5511-6.
25. Nisanthan R, Jeepara P, Pirasath S. Descriptive study on socio-demographic profile, pattern of injuries, aetiology and outcome of domestic violence at a tertiary care centre of Batticaloa district. Sri Lanka Journal of Surgery. 2019;37(2):4-8.
26. Sheikh S. Characteristics of interpersonal violence in adult victims at the Adult Emergency Trauma Centre (AETC) of Queen Elizabeth Central Hospital. Malawi Medical Journal. 2020;32(1):24-30.
27. Zhong S, Yu R, Fazel S. Drug Use Disorders and Violence: Associations with Individual Drug Categories. Epidemiologic Reviews. 2020;42(1):103-16.