

Characterization of Physical Assault Related Injuries in a Tertiary Care Center In North India

Ravdeep Singh¹ Harvinder S. Chhabra², Karan pramod³, Rajiv Joshi⁴

¹Assistant Professor, ²Forensic expert ³Junior resident,⁴Professor ,Department of Forensic Medicine, Guru Gobind Singh Medical College and Hospital, Faridkot, Punjab.

How to cite this article: Singh R, Chhabra HS, Pramod K, Joshi R. Characterization of Physical Assault Related Injuries in a Tertiary Care Center In North India 2023;17(2): 136-140

ABSTRACT

Introduction: Physical violence and aggression has been extensively studied in relation to different forms of aggression, gender differences, its effects, risk factors etc. Violence not only results in physical problems but it also has economic and psychological impact on the victim. Cases of physical violence are usually brought to emergency and vary from minor injuries to fatal outcome.

Methods: This research aims to understand patterns of physical assault and identify ways to prevent and reduce the incidence. The two year retrospective study was carried out between 1st June 2020 to 31th June 2022 from the in the causality data of tertiary care center in Punjab.

Results: Of the total, 76.5% of the cases were male. 35.2% cases fall in age group of 21 to 30 years. Most commonly encountered injury sites were head-face-neck region in 39.6% of the cases. 60.89% cases were seen in rural area. Use of blunt weapon was seen in 64.80% of cases. Bruise was most common type of injury seen in 38.42% cases.

Keywords: Physical assault, Injuries, Violence, Medicolegal

INTRODUCTION

The definition of violence as per world health organisation is, the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group of people or community that either leads to or has a high probability of leading to injury, death, psychological harm, mal-development or deprivation.¹

Violence not only results in physical problems but it also has economic and psychological impact on the victim. Beside loss of earning and productivity, the economic cost includes medical and legal expenses. Physical violence cases are routinely seen

in emergency department. Besides giving medical treatment, It is the duty of medical officer posted in emergency to prepare medicolegal report and inform the police about such cases.²

The present study is aimed to identify the demographic profile, characteristics of assault and injuries sustained to provide real data to various authorities to formulate policy in order to reduce these Incidences.

MATERIAL AND METHODS

The present retrospective observational, descriptive study involves medicolegal cases which came to the causality of a tertiary care

Corresponding Author: Harvinder singh Chhabra Forensic Expert, Civil Hospital, Punjab

Email : drharvindersinghchhabra@gmail.com

center in Faridkot, Punjab from 1st June 2020 to 31st June 2022. The data was collected from hospital medicolegal register case sheets. Record of all the cases of alleged physical assault that came to the emergency department of hospital during the above said period was included in this study. Further available injury reports, radiological reports, specialist opinions were taken into consideration in each case. From these records relevant general information, demographic data, brief history of the alleged incident mode of injuries, types of injuries, relevant investigation related to injuries were recorded. Data was collected in various parameters like age, gender, residence, and indication for medico-legal cases. The collected data was analyzed and depicted in the form of tables, graphs and pie charts by using various parameters and compared with other similar studies.

OBSERVATIONS AND RESULTS

In the present study 1950 trauma cases presented in the causality department during the period of two year (from 1st June 2020 to 31st June 2022). Out of these 1950 cases 583 (29.8%) cases were reported to be of physical assault (Table 1).

In the present study the majority of victims fall in the age group of 21-30 yrs constituting 35.2% cases followed by 31-40 years (28.3%). The mean age of the victims was 37 years. The gender ratio was observed to be 3.25 males

per female cases. Males constitute 76.5 % and Females constituted 23.50% of the total caseload. While the majority of male cases (37.0%) was seen in 21-30 yrs, for females peak incidence was seen in the age group of 31-40 years (31.4%).

Areas wise, most of the cases (60.89%) were seen in rural areas, while urban areas constitute 39.11% of cases (Table 2).

Table 3 shows the distribution of cases, according to time period in a day. Most of the cases (45.80%) occurred during the time period of 2 pm to 8 pm, followed by a time period of 8 pm to 12 am (36.54%). Least number of cases was seen in the early morning time (2.00 am to 8.00 am) (Table 4).

The most common used weapon of offence was blunt in 324 (64.80%) cases followed by sharp weapon in 127 (25.40%) cases. Firearm was used in 24 (4.80%) cases (Table.4).

The most common type of injury encountered was bruise (n=224, 38.42%), followed by laceration (n=221, 37.91%) and abrasion (n=212, 36.36%). Among the injuries by sharp weapon incised wound was most commonly observed (n=102, 17.50%). Multiple injuries were seen in 45.80% cases (Table 5).

The head and neck region was involved in 38.95% cases, followed by lower limbs 30.7% and upper limbs 26.9%. Pelvic region, 4.6% and genitalia 0.5% were less commonly involved. (Table.6)

Table 1: Age and sex wise distribution of cases

Age group (yrs)	Male		Female		Total	
	Number	(%)	Number	(%)	Number	(%)
1-10	013	02.90	004	02.90	017	02.90
11-20	050	11.20	009	06.60	059	10.10
21-30	165	37.00	040	29.20	205	35.20
31-40	122	27.40	043	31.40	165	28.30
41-50	054	12.10	026	19.00	080	13.70
51-60	022	04.90	009	06.60	031	05.30
61-70	017	03.80	003	02.20	020	03.40
> 70	003	00.70	003	02.20	006	01.00
Total	446	100.0	137	100.0	583	100.0

Table 2: Area wise distribution of cases

Area	No of cases	%
Rural	355	60.89%
Urban	228	39.11%
Total	583	100.00%

Table 3: Time of occurrence

Time of day	No of cases	%
12 am to 8 am	030	05.15
8 am to 2 pm	073	12.52
2 pm to 8 pm	267	45.80
8 pm to 12am	213	36.54
Total	583	100.0

Table 4: Type of weapon used

S. no	Weapon	No. of cases	%
1.	Blunt	324	64.80
2.	Sharp	127	25.40
3.	Blunt and sharp	108	21.60
4.	Firearm	024	04.80
5.	Total	583	100.00

DISCUSSION

Medical professional's frequently come across cases of physical assault in the emergency department. It is a duty of the medical officers to register these cases and prepare a medicolegal report. Careful description of injuries is utmost important as it serves as evidence in judicial courts.

In the present study, the most frequently affected age group was 21-30 years (Table 1). This is consistent with previous studies.^{3,4} Being one of the most active phases of life in terms of physicality and socially, they are more involved in outdoor, sports and recreation activities, which lead to increased interaction with other people and a more chance of arguments and disagreements resulting in physical assaults. Risk-taking behaviour and being mentally a bit immature with little experience of life are other factors contributing to physical violence. Males were predominantly affected (78%) while females constituted only 22% of the total

Table 5: Types of injury

Type of injury	No. of cases	%
Multiple injuries	267	45.80
Contusion	224	38.42
Laceration	221	37.91
Abrasion	102	17.50
Incised wound	101	17.32
Firearm	026	04.46
Stab wound	021	03.60
Chop wound	007	01.20
Fractured tooth	006	01.03

Table 6: Part of body involved

Part of body	Number of Cases	%
Head and neck	231	39.60
Lower limbs	179	30.70
Multiple region	169	29.00
Upper limbs	157	26.90
Anterior chest	135	23.20
Posterior chest	090	15.40
Posterior abdomen	066	11.30
Anterior abdomen	041	07.00
Pelvic region	027	04.60
Genitalia	003	00.50

caseload. Similar results were seen in previous studies.^{5,6,7,8} This may be because the majority of the population are in the profession of farming in this region; males are more involved in outdoor activities and are more vulnerable to interpersonal conflicts.

Area wise, most of the cases (60.89%) were seen in rural areas (Table 2), while urban areas constitute 39.11% of cases. The findings are comparable to the findings of previous studies,^{5,7,9} however our findings are in contrast to studies done by Hussini et al⁶, Tigne et al¹⁰, Mayurya et al¹¹ where more cases were seen in urban areas. This may be due to the fact that the study population in our study is more concentrated in the rural areas, probably more affected because of frequent quarrels relating to agricultural land disputes, distribution of water etc. Further rural areas

have a lower level of education, relatively lower level of policing, poor condition of basic amenities and also the land disputes that run into generations contributing to more number of cases in rural areas.

The majority (43.4%) of the incidents of physical assault fall in between time period of 6 pm-12 pm i.e. in the evening hours while minimum number (11.5%) of the incidents took place in between 6 am to 12 pm i.e. morning hours (Table 3). Similar findings were seen in previous studies.⁹⁻¹⁴ During the evening time people gather at homes and public places after completing their duties that increases the chances of conflict. The trend of Consumption of alcohol in the evening also becomes the one major contributing factor for the events that lead to physical assault. Minimum incidences of cases (10.75%) were seen in between 12 a.m. to 6 a.m. this may be because people usually remain asleep while in morning hours people are fresh, stress level is at its lowest hence least incidents take place during morning hours.

In the present study most frequently used weapon of offence was blunt seen in 324 (64.80%) cases (Table. 4). Similar results were seen in other studies.^{3-5,10,11,15,16} Sharp weapon was seen in 127 (25.40%) cases. Use of firearm was seen in 4.80% cases (n=24). The use of blunt weapon may be explained in the fact that blunt objects are more easily available, are desirable if no intention is there to inflict any grievous injury.

Multiple types of injuries were seen in 45.80% cases (Table. 5). The most common injury type encountered in our study was bruise seen in 224 cases (38.42%). Our finding is consistent with other studies.^{3,4,11,16,17} Laceration was the next most common injury seen in 37.91% (n=221) cases followed by abrasion 36.36% (n=212). Our findings are in contrast to findings of a study by Tomar et al⁷ and Thube HR et al¹⁸ where the most common type of injury was laceration. Among the injuries caused by sharp weapon, incised wounds 17.50% (n=102) were most commonly observed.

Like many previous studies head and neck were observed to be main body region involved (39.60%).^{3-5,10,11,19} Next commonly affected region was found to be the lower extremities (Table. 6) with 179 cases (30.70%). This is in contrast to study by Subba et al⁴ where upper limbs were second most common site involved. Pelvic region 4.60% and genitalia 0.50% was least commonly involved part of body. As different types of physical aggressions may have different motives, the involvement of different anatomical sites may reflect the intention of the assailant and defense put up by the victims. The head and is most commonly affected in physical assault cases as it is the most vital part of the body, injury to head not only produce desired results but also disorient the victim so that he is not able to put much fight.

CONCLUSION

Young males were more involved in physical assault cases. Majority of cases were seen in evening hours. Rural population was more affected in comparison to urban population. Bruise was the most common type of an injury observed which implicates use of blunt weapons. Head and neck was the commonest target area of assault. Considering most of the population in this region being rural special focus is needed specifically on the complexities of rural agricultural societies and the circumstances that lead to violent events. Similar studies over different time periods will help provide contextual information about local and socio-cultural differences, helping to plan and implement injury prevention strategies.

Ethical approval: Not required as the data was collected from already available records in the department and is retrospective in nature.

Funding: self

Conflict of Interests: Nil

REFERENCES

1. Krug EG, Mercy JA, Dahlberg LL, Zwi AB. The World Report on violence and health. *The Lancet*. 2002;360(9339):1083-8.

2. Malik YK, Chawla R, Sharma G, Malik P, Singh RP, Tripathi A. Profile of Medicolegal cases in casualty of a rural medical college of Haryana. *J Indian Acad Forensic Med.* 2013;35: 367-8.
3. Oberoi SS, Aggarwal KK, Bhullar DS, Aggarwal AD, Walia DS, Singh SP. Profile of assault cases in patiala. *J Punjab Acad Forensic Med Toxicol* 2012;12(1):17-21
4. Subba SH, Binu VS, Menezes RG, Kumar V, Rana MS. Physical assault related injuries in western Nepal a hospital based retrospective study. *J Forensic Med Toxicol.* 2010;17(4):203-8.
5. Aggarwal KK, Singh SP, Aggarwal AD, Sandhu SS. Gender differences in the characteristics, magnitude and pattern of acute assault related. *J Punjab Acad Forensic Med Toxicol.* 2012;12(1):29-32.
6. SN Hussaini CS Kulkarni, AK Batra. Profile of medicolegal cases coming to casualty of Government Medical College, Akola. *J For Med Sci. Law.* 2013;Vol 22,(2).
7. Tomar JS, Soni S, Singh BK, Agrawal R. Clinico-Epidemiological profile of assault cases at a tertiary centre in Indore. *Int J Forensic Med Toxicol Sci.* 2019;4(2):39-41.
8. Mollen CJ, Fein JA, Vu TN, Shofer FS, Datner EM. Characterization of nonfatal events and injuries resulting from youth violence in patients presenting to an emergency department. *Pediatr Emerg Care.* 2003;19(6):379-84.
9. Mir M, Jan F, Yattoo GH, Khalil, Ganai S, Irshad H. Profile and pattern of medicolegal cases in a tertiary care hospital of north India. *J Med Sci Clin Res.* 2016;4(09):12628-34.
10. Tingne CV, Shrigiriwar MB, Ghormade PS, Kumar NB. Quantitative analysis of injury characteristics in victims of interpersonal violence: An emergency department perspective. *J Forensic Leg Med.* 2014;(2):19-23.
11. Maurya R, Prakash S, Sen P, Gautam S, Singh S, Maurya R. Profile of assault victims attending an emergency outpatient department of a teaching hospital in India. *Sch J Appl Med Sc.* 2015;3(1B):92-7.
12. Trangadia M, Mehta R, Rada N, Gupta B. Profile of medico-legal cases in tertiary care hospital in Jamnagar, Gujarat: retrospective study of one year. *J Res Med Dent Sci.* 2014;2(4):57.
13. Shreedhar NC, Chandan V, Shreekrishna HK. Retrospective study of profile of medicolegal cases at Basaveshwara Medical College, Chitradurga. *Med Leg J.* 2021;21(4)348-55.
14. Garg V, Verma S.K. Profile of Medicolegal cases at Adesh Institute of Medical Sciences and Research, Bathinda, *J Punjab Acad Forensic Med Toxicol.* 2010;32(2):150-2.
15. Brahmanekar TR, Sharma SK. A record based study of frequency and pattern of Medico-legal cases reported at a tertiary care hospital in Miraj. *Int J Community Med Public Health.* 2017;4(4):1348.
16. Fothergill NJ, Hashemi K. A prospective study of assault victims attending a suburban A&E department. *Arch Acad Emerg Med.* 1990;7(3): 172-7.
17. Rekhi, T. & Singh, KhP & Nabachandra, H. Study on homicidal blunt force injuries. *J Forensic Med Toxicol.* 2007;24(2):3-5.
18. Thube HR, Chikhalkar BG, Nanandkar SD. A Prospective Study of Injury Pattern in Victim of Assault Attended in South Mumbai Government Hospital. *J Ind Acad Forensic Med.* 2015;37(1):37.
19. Akdur O, Durukan P, Ozkan S, Avsarogullari L, Salt O, Ikizceli I. Interpersonal violence related injuries in Central Anatolia, Turkey. *Int. J. Emerg. Med.* 2008;6(1):1-3.