



Medicolegal Aspects of Victims of Assault Admitted to a Tertiary Care Hospital in Sri Lanka

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ABSTRACT

Introduction: Violence with physical assault is a common cause of morbidity and mortality prevalent but not limited to underdeveloped countries. The opinion of the forensic expert is often indispensable in such cases to determine the penalties. This study was planned to describe the pattern of presentation of the victims and evaluate the strengths and limitations in formulating a scientific medicolegal opinion based on the findings of the victim. **Methods:** A retrospective descriptive study based on the case records of the victims of assault admitted to Colombo North Teaching Hospital, Ragama, Sri Lanka, was conducted for four years. **Results:** Out of the 400 victims, the majority (72% $n = 290$) were males and of the age-group of 21 to 40 ($n = 216$). The reason for assault in the majority was sudden provocation ($n = 99$, 25%), followed by previous long-duration enmity ($n = 89$, 22%). The majority (83%) had isolated blunt force trauma, and the injuries were nongrievous (74%). Defense injuries were significantly associated with attempted defense ($p = 0.000$) and sharp force trauma ($p = 0.002$). The underlying reason for the assault was not significantly associated with the causative weapon ($p = 0.228$) or body region injured ($p = 0.195$). **Conclusions:** Even though the presentation and the pattern of injuries are definitely of value in formulating a scientific opinion, the study identified the limitations of the forensic experts, and the need for a holistic approach at the investigations was highlighted.

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INFORMATION

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INTRODUCTION

Among the causes of preventable injuries worldwide, violence has a leading role (1,2). Interpersonal violence amounts to a significant number of hospital admissions as well as deaths (3,4). Physical assault is identified as a common cause of morbidity and mortality in underdeveloped and developing countries (3,5). However, it is generally defined as intentionally putting another person in reasonable apprehension of an imminent harmful or offensive contact. Physical injury is not required (6). Medical dictionaries define assault as a crime or attempting to cause immediate offensive physical contact or bodily harm that someone has the actual ability to cause and put the victim in fear of such harm or contact (7). The legal definition of assault varies by jurisdiction. According to the Penal Code of Sri Lanka, “Whoever makes any gesture or any preparation, intending or knowing it to be likely that such gesture or preparation will cause any person present to apprehend that he who makes that gesture or preparation is about to use criminal force to that person, is said to commit an assault (8)”. According to the Sri Lankan police crime data, the incidents of assault and other physical violence is increasing over recent years (9).

Experts in forensic medicine are expected to perform a detailed examination of these victims and record the findings to come to medicolegal conclusions regarding many unanswered questions. The categorization of the injury is an expected opinion from a medical officer who examine these victims for medicolegal purposes. It depends on the severity of the injury and is illustrated on the Penal Code of Sri Lanka (8). There are several categories of hurt as simple/nongrievous, grievous, endangering life (also under grievous hurt), fatal in the ordinary course of nature, and necessarily fatal. The decision on the severity of punishment is dependent on these categories.

Further, they are expected to make clarifications regarding the consistency of the injuries with the historical evidence (10). There are few elements required to prove a crime. Firstly, the defendant’s behavior is to

create a state of fear or danger in the victim. In other words, accidental acts do not result in assault charges. Next, the victim must apprehend the defendant’s potentially harmful or offensive acts. Thirdly, the victim’s fear must be a direct response to a threat that is imminent, or immediately about to occur. Finally, the defendant’s actions must present a physical threat or offensive behavior to the victim. All the above elements must be established with evidence for a defendant to be found guilty of the offense (11). In addition to the circumstantial evidence, the police is relying on medical evidence to get answers to these questions.

Penalties may vary according to state law. In Sri Lanka, according to the Penal Code, the establishment of assault is an important factor. Because when it is executed due to sudden provocation, the penalty is less, whereas assaults or use of criminal force on a person other than on grave and sudden provocation warrants for a more serious punishment. Therefore, it is essential to get an idea about the intention of the assailant, which plays a significant role in deciding the punishment. An idea about the intention of the assailant to a certain extent can be made by assessing the pattern of injuries. For example, if injuries are confined to vital areas, it is more likely that the intention was to kill/inflict grievous injuries to the victim. On the other hand, defense injuries give an idea that the particular person was alert at the time of the incident, and it is helpful when it comes to the reconstruction of the incident. Therefore, it is worth studying the injuries inflicted following an assault.

However, the challenges and the limitations of formulating a medicolegal opinion based on the scientific evidence left on the victims of assault have not been appropriately evaluated in scientific research. Hence, we studied the extent, nature, and pattern of distribution of injuries on victims of assault to evaluate the ability to make medicolegal conclusions.

METHODS

It was a retrospective descriptive study based on case records of the victims of assault admitted to Colombo North Teaching Hospital–Ragama, Sri Lanka, for the

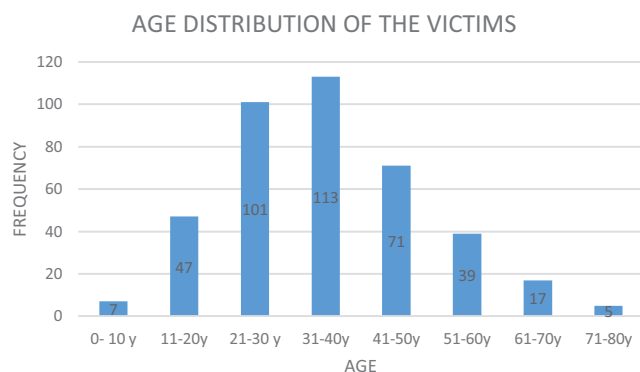


Figure 1: Age distribution of the victims.

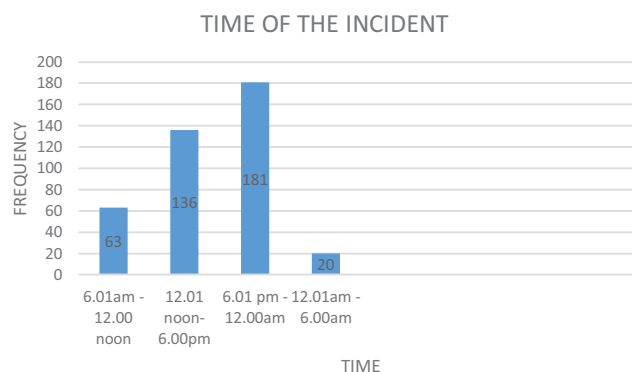


Figure 2: Time of the incident.

past four years. Four hundred case records of victims who admitted from the year 2016 to 2020 were perused to obtain the historical, examination, investigation, and management details to fill the pro forma. These case records are medicolegal records and bed head tickets which were filled by Government medical officers who had a MBBS degree and atleast 4 years of experience in the field of Forensic Medicine.

Data analysis was done using the Statistical Package for Social Sciences—Version 16 (SPSS, Version 16).

RESULTS

The majority of the victims ($n = 290$, 72%) were males, while 28% were in the age-group of 31 to 40 years ($n = 113$, 28.2%), followed by 21 to 30 years (Figure 1).

The victims had faced the incident during the first half of the night in a majority ($n = 181$, 45%) followed by evening ($n = 136$, 34%; Figure 2).

Incident has taken place at the victims' residence in a majority ($N = 173$, 43%; Figure 3).

The reason for assault in a majority was sudden provocation ($n = 99$, 25%) followed by previous long-duration enmity ($n = 89$, 22%; Figure 4). Of all, 331 (83%) presented following isolated blunt force trauma followed by 39 (10%) with isolated sharp force

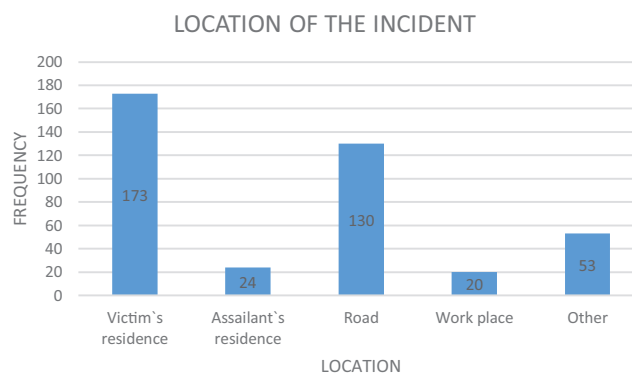


Figure 3: Location where the incident has taken place.

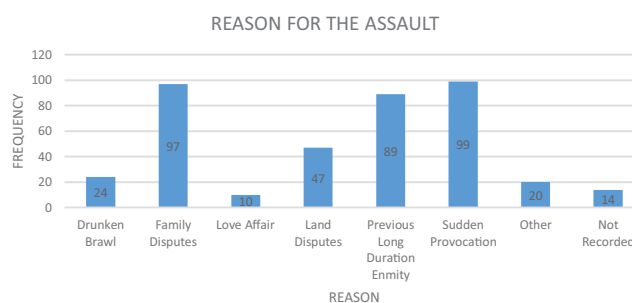


Figure 4: Reason for the violence.

trauma. There were 30 (7%) with others (both blunt and sharp injuries and one flame burns).

The underlying reason for assault among 13 out of the 39 sharp trauma victims was previous long-duration enmity followed by sudden provocation among 10.

Table 1: Underlying Reason Versus Causative Force.

Reason	Blunt	Sharp	Other/Blunt and sharp	Total
Drunken brawl	20	3	1	24
Family disputes	86	5	6	97
Love affair	9	0	1	10
Land disputes	38	6	3	47
Previous long duration enmity	67	13	9	89
Sudden provocation	84	10	5	99
Other	17	0	3	20
Not recorded	10	2	2	14
Total	331	39	30	400

Table 2: Severity of Injury Versus Causative Force.

Category of hurt	Blunt	Sharp	Others/Both blunt and sharp	Total
Nongrievous	266	20	11	297
Grievous/above	65	19	19	103
Total	331	39	30	400

Out of the 331 blunt trauma victims, 84 were due to sudden provocation, while there were 67 due to long-duration enmity. However, the causative force does not significantly associate with the underlying reason for assault ($p = 0.228$; **Table 1**). Nineteen out of 39 sharp force trauma victims had more serious injuries, while only 65 out of 331 blunt force trauma victims had serious injuries. Sharp force trauma was commonly associated with a higher category of hurt (COH), and the association is significant ($p = 0.000$; **Table 2**). Category of hurt in a majority (297, 74%) was nongrievous (**Table 3**).

There was no significant association of the underlying reason for assault with the presence of head injuries ($p = 0.195$; **Table 4**).

Historical evidence revealed that 238 (60%) victims had tried to defend themselves, while there were

Table 3: Category of Hurt.

Category of hurt	Frequency	Percentage
Nongrievous hurt	297	74.3
Grievous hurt	82	20.5
Endangering life	6	1.5
Fatal in the ordinary Course of nature	15	3.8

Table 4: Underlying Reason Versus Presence of Head Injury.

Reason	No head injury	Head injury present	Total
Drunken brawl	18	6	24
Family disputes	73	24	97
Love affair	6	4	10
Land disputes	39	8	47
Previous long duration enmity	58	31	89
Sudden provocation	67	32	99
Other	11	9	20
Not recorded	11	3	14
Total	283	117	400

Table 5: History of attempted defense.

History of defense	Frequency	Percentage
No	125	31.3
Yes	238	59.5
Not clear	37	9.3
Total	400	100

125 (31%) who could not defend themselves (**Table 5**).

Defense injuries were present in 179 (45%), while there were 187 (47%) who did not show any defense injuries (**Table 6**). In all, 176 out of 238 victims who had attempted defense had defense wounds, while only 3 out of 125 who could not even attempt defense had typical injuries suggestive of possible defense.

Table 6: Presence of Defense Injuries.

Presence of defense wounds	Frequency	Percentage
No	187	46.8
Yes	179	44.8
Undetermined	34	8.5
Total	400	100

Table 7: Attempted Defense Versus Presence of Defense Wounds.

Attempted defense	Injuries of defense present	Injuries of defense absent	Undetermined	Total
Yes	176	54	8	238
No	3	110	12	125
Not clear	0	23	14	37
Total	179	187	34	400

Table 8: Causative Force Versus Presence of Defense Injuries.

Presence or absence of defense wounds	Sharp	Blunt	Other/Both blunt and sharp	Total
Yes	27	130	22	179
No	11	170	6	187
Not mentioned	1	31	2	34
total	39	331	30	400

However, the association of typical defense wounds with the historical evidence of attempted defense was statistically significant ($p = 0.000$; **Table 7**).

The presence of defense injuries was significantly associated with sharp force trauma ($p = 0.002$; **Table 8**).

DISCUSSION

An accurate and comprehensive evaluation of historical examination, investigation findings, and preparation of a proper medicolegal report with a sound opinion based on scientific facts is vital for

administering justice toward the victims and the persons suspected of involvement in the crime. Having a good insight into the nature and pattern of injuries that the medicolegal opinion is formulated is extremely important. Inadequate knowledge and inadequate scientific evaluation into the forensic medical evidence available cause legal difficulties and the forensic experts can be subjected to medical negligence litigations (12,13).

The male preponderance in medicolegal cases is reported in previous studies, which was evident in this study (14). The common age-group was 21 to 40 years in our study, and this was again consistent with the existing literature for all medicolegal cases (15). More active lifestyles, aggressive behavior, more outdoor activities, and substance abuse could be the underlying reasons for male dominance (15,16).

The majority of the victims had faced the assault during the first half of the night. Violence-associated incidents are frequently reported at night, especially among men (17), and this is when people tend to consume alcohol while returning home after the day's work (18). Victims' own home is the location where the majority of these incidents had taken place. This indicates that most of this interpersonal violence is related to domestic issues, either domestic violence or other family disputes. Further, this was confirmed by the fact that the underlying reason for assault in a majority was sudden provocation followed by family disputes. However, when it comes to lethal trauma, most typical motive reported in a study done in Sri Lanka (2005-2006) was the previous enmity when terrorism-related deaths were excluded, and only 2% were reported to have sudden provocation as underlying reason (19). Out of 76 fatalities due to sharp force trauma, those autopsied at Teaching Hospital Colombo North, during five years, it was revealed that there were only 10 fatalities due to sudden provocation while there were 42 fatalities due to the previous enmity (20). This shows that even though sudden provocation leads to violence and trauma resulting from injuries, fatalities are rare. One-fifth of all murders in Delhi in 2018 resulted from "sudden provocation over trivial issues while there were 38% due to personal enmity (21).

When the underlying reason for the violence was considered, most of the sudden provocation-related violence and the family disputes resulted from blunt force trauma. In contrast, previous long-duration enmity-related violence was commonly observed among sharp trauma cases, though there was a significant number of sudden provocation-related violence. Accessibility and availability of a weapon in the vicinity at the time of argument results in armed violence in cases of sudden provocation and family disputes (22). In a study on domestic violence, Sorenson and Wiebe report that hands and feet were the most common method of assault (23).

The COH was nongrievous in a majority, and the presence of sharp force trauma was significantly associated with injuries that are grievous or above. The common association of sharp force injuries in violence due to the previous enmity and with higher categories of hurt indicates the possible intention of the assailant to cause more serious injuries with the use of a dangerous weapon in previous enmities. According to the Police manual, an armed assailant is considered a person who is actively engaged in killing or attempting to kill (24). Further, Thompson et al report that even in domestic violence, the severity of injuries is positively related to using a weapon (25). In a study done on cases of fatalities due to intentional violence in India, majority was having sharp force trauma and most of the victims were subjected to violence due to previous enmity (26).

There were 117 victims with head injuries. The head is the commonly affected body region in victims of assault (27) and the targeted organ in fatal violence (28). However, there was no significant association of head injuries with the underlying reason for violence. In a comparative study of head, neck, and facial injuries as markers of domestic violence in women, it was revealed that even though the sensitivity of head injuries as a marker of domestic violence is 91%, specificity is only 59% (29). The current study's findings also confirmed that the affected body region does not indicate or suggest the underlying reason for the crime.

There were 179 (45%) victims with defense injuries. The presence of defense injuries is reported in 48% of

the victims of homicides in a study conducted on 189 cases of homicides (30). In a study on self-defense injuries in homicidal deaths, 57.4% of the defense wounds were due to sharp force trauma (31). In a study on 101 homicides due to sharp force trauma, there were 50 victims with defense wounds (32). Defense wounds were found in 38.5% of the victims of stab wounds (33). Even though 238 had revealed that they had tried to defend themselves, only 179 (75%) had the medicolegal evidence for it. The association of defense injuries among the victims who had tried or attempted defense was statistically significant.

Further, the study revealed that a majority who had been subjected to sharp force trauma (48 out of 69) had defense wounds, while only 117 out of 235 victims subjected to blunt force trauma had defense wounds. The common association of defense wounds with sharp force trauma is reported in previous studies as well (30,33).

LIMITATIONS

This study is based on a limited number of clinical cases. Large number of data may strengthen or modify the already arrived conclusions. Some sociodemographic factors were not analyzed as the study is a retrospective and the collection of data was based on the previous records.

CONCLUSIONS

The study revealed that the victims of assault who were hospitalized were young socially active males. Most of these incidents had taken place in the first half of the night and at the victim's own home. Sudden provocation and family or domestic disputes were the most typical underlying reasons for violence which explain the common location of the incident as home and blunt force trauma as the most typical causation of injuries. The majority were less severe injuries caused by unarmed blunt force trauma, which can be explained by common underlying reasons of sudden provocation and family disputes. Sharp force trauma was significantly associated with severe injuries and observed among victims of previous long-duration

enmity. However, there was no significant association of the causative force or the affected body region with the underlying reasons for assault highlighting the difficulty in formulating firm conclusions on circumstances. Thus, the study identified the limitations of the forensic medical experts in formulating medicolegal opinions based on the findings, and the need for a holistic approach that includes medical evidence and opinion together with other investigative details was highlighted.

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