



Original Article

Violence-Related Injuries: The Most Common Cases in Hyderabad, Pakistan.

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ABSTRACT

The law influences every aspect of human activity, including medical practice. The nature of casualty is affected by geographical regions, cultures, and social values. Determining characteristics of casualty can guide health policy and can assist in managing healthcare resources. **Objective:** To profile the cases at casualty department of a tertiary teaching hospital. **Methods:** The study was conducted at the casualty department of Liaquat University Hospital Hyderabad, Pakistan and Department of Forensic Medicine & Toxicology LUMHS, Jamshoro, over a period of one year from January 2021 to December 2021. A total of 3,487 cases were recorded and categorized into violence-related, transportation-related, substance-related, and sexual assault-related injuries. **Results:** The majority of cases were violence-related incidents (84.65%), followed by transportation-related accidents (14.65%), substance-related injuries (3.61%), and sexual assault-related injuries (0.69%). Violence-related injuries were divided into assault cases, firearm incidents, and police torture. Transportation-related injuries were categorized as road traffic accidents and train accidents. Assault and road traffic accidents were the leading cause of violence-related and transportation-related injuries, respectively. The highest numbers of cases were observed in April, June, and May. **Conclusions:** A substantial portion of cases at casualty department of Liaquat University Hospital, Hyderabad is contributed by violence-related injuries.

INTRODUCTION

Medico-legal cases are injuries that require investigation to determine responsibility for the cause of injury through law enforcement agencies. These cases may involve injuries that suggest offenses or accidental injuries, all unnatural deaths, suspected sexual assault, suspected criminal abortion, unconsciousness with a clear cause, suspected poisoning or intoxication, cases referred from court, cases that are brought dead with suspected offense, suspected self-inflicted injuries or suicidal attempts, and any other case of legal importance [1]. Such cases may be presented directly to the hospital, where the physician examines the case and identifies the need for legal investigation by the constabulary. Besides, law

enforcement agencies can also refer such cases to the physician to get aid in investigation or other law requirements [2]. It is becoming increasingly clear that every hospital has cases that carry legal implications significant enough to categorize them as medicolegal cases. With more and more doctors being summoned to Courts of Law or Medical Tribunals to address inquiries regarding patients under their care, it is evident that medico-legal issues can surface at any point during medical treatment, even after death of patients. Courts may request all medical records of a patient for review, underscoring the importance of understanding the characteristics of medico-legal cases [3]. Some doctors

avoid dealing with medico-legal cases due to the lengthy legal procedures, disputes, and political pressures that can disrupt their routine practice and social life [4]. However, clear institutional guidelines are necessary to handle medico-legal cases properly, and almost all hospitals and teaching institutions have an 'institutional medico-legal manual.' Even if no such manual is available, Medico-legal cases do not pose any problem if dealt with proper caution, care, and attention, such as appropriate documentation, information, thorough examination, necessary investigations, and referral if required [5]. A registered medical practitioner is responsible for judging every MLC correctly and informing the law enforcement authorities to save themselves from unnecessary allegations in the future [6]. MLC cases are usually observed in common practice in the sub-continent to pressure the opposite party in a clash, take revenge, or obtain an extra favor from the judiciary. The nature, frequency, and percentage of medico-legal cases vary from region to region and have some seasonal variations[7].

Analyzing medico-legal cases helps public health authorities identify patterns and trends in injuries, illnesses, and fatalities within a population. This information is vital for developing and implementing effective prevention strategies and interventions to reduce the incidence of preventable injuries and deaths. Therefore, the present study was conducted with the aim determining the characteristics of medico-legal cases at Liaquat University Hospital, Hyderabad, Pakistan.

METHODS

This cross-sectional study was carried at the casualty department of Liaquat University Hospital, Hyderabad and Department of Forensic Medicine & Toxicology, LUMHS, Jamshoro, which was chosen as the primary location for data collection due to its status as the main tertiary care hospital in the region. The study was conducted from January 2021 to December 2021 after approval ref no. LUMHS/FM/178/19, dated 28-11-2019, and utilized consecutive sampling as a non-probability method to select patients of all genders and age groups requiring trauma medicine care as the inclusion criteria, while cases of emergency medicine other than trauma cases were excluded. Cases with violence related injury, transportation related injuries, substance related and sexual assault were studied, such as assault, police torture, fire arm, road traffic accidents, drugs, alcohol, poison abuse and rape. The data collected was analyzed using SPSS version 22.0.

RESULTS

A thorough initial assessment of cases was performed to determine extent of the injury and identify any life-threatening conditions. This involved assessment of vital signs, airway, breathing, and circulation. Depending on the assessment and need of the care, immediate interventions were implemented to stabilize the patients accordingly, including, controlling haemorrhage, ensuring normoxia, ventilation, checking for suspected fractures spinal injuries, limiting contamination to wounds and injuries, managing pain, and using prophylactic antibiotics, where required clinically. Once stabilized, the cases in casualty department were subjected to comprehensive medical evaluation through physical assessment, imaging studies, and laboratory examination and recommended for specific interventions or hospitalization based on the type of injury and clinical needs. In this study majority of cases were males accounted 2940 (84.31%) and 547 (15.69%) were females shown in Figure 1.

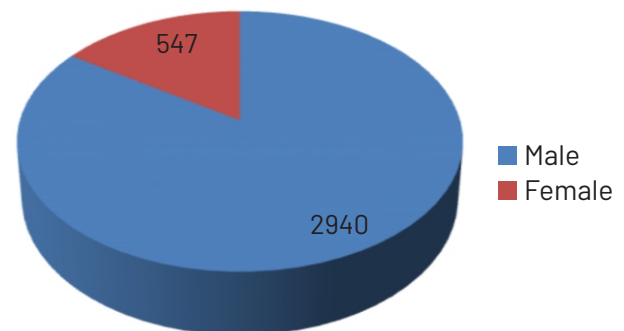


Figure 1: Baseline details of cases

The cases were categorized as violence-related, transportation-related, substance-related, and sexual assault-related injuries shown in Table 1. The majority of cases were violence-related injuries, accounting for 84.65% (2,952) of cases, in which 2756, 191, and 3 were assault, fire arm and police torture. Transportation-related injuries were 14.65% (511), substance-related injuries at 3.61% (126), and sexual assault-related injuries at 0.69% (24). Road traffic accidents contributed largely to transportation-related injuries by causing more than 95% of injuries. Violence-related injuries were further divided into assault cases, firearm incidents, and police torture. Among these, assault cases had the highest contribution at 93.57% (2,758) followed by firearm incidents at 6.47% (191). In substance- and sexual assault-related injuries, alcohol intoxication and rape showed a higher proportion (73% and 79%, respectively) than poisoning and sodomy (27% and 21%, respectively). The highest number of cases were observed in April at 10.04% (350), followed by June at 10.8% (376), May at 10.53% (367), and July at 9.04% (315). The lowest number of cases was observed in November at 6.74% (235).

Table 1: Month-wise distribution of cases

Month	Assault	Violence-related injuries			Transportation-related injuries			Substance-related injuries			Sexual assault-related injuries			Total
		Fire Arm	Police torture	Total	Road	Train	Total	Alcohol	Poison	Total	Rape	Sodomy	Total	
January	174	36	-	210 (86.42%)	31	-	31 (12.76%)	3	-	3 (1.23%)	1	1	2 (0.82%)	243
February	174	18	-	192 (76.8%)	36	20	56 (22.4%)	7	9	16 (6.4%)	2	-	2 (0.8%)	250
March	192	26	-	218 (84.5%)	39	-	39 (15.12%)	8	-	8 (3.1%)	1	-	1 (0.39%)	258
April	287	11	-	298 (85.14%)	50	-	50 (14.29%)	19	3	22 (6.29%)	1	1	2 (0.57%)	350
May	316	8	2	326 (88.83%)	40	1	41 (11.17%)	12	2	14 (3.81%)	-	-	=	367
June	320	12	-	332 (88.83%)	42	-	42 (11.17%)	10	1	11 (2.93%)	1	1	2 (0.53%)	376
July	252	18	1	271 (86.03%)	39	1	40 (12.7%)	5	1	6 (1.9%)	3	1	4 (1.27%)	315
August	258	14	-	272 (86.62%)	40	-	40 (12.74%)	7	-	7 (2.23%)	2	-	2 (0.64%)	314
September	242	17	-	259 (84.64%)	44	-	44 (14.38%)	3	2	5 (1.63%)	3	-	3 (0.98%)	306
October	189	14	-	203 (85.29%)	34	-	34 (14.29%)	2	3	5 (2.1%)	1	-	1 (0.42%)	238
November	193	5	-	198 (24.26%)	33	-	33 (14.04%)	3	11	14 (5.96%)	3	1	4 (1.7%)	235
December	161	12	-	173 (73.62%)	61	-	61 (25.96%)	13	2	15 (6.38%)	1	-	1 (0.43%)	235
Total	2758	191	3	2952 (84.65%)	489	22	511 (14.65%)	92	34	126 (3.61%)	19	5	24 (0.69%)	3487

The distribution of cases into various categories is presented in Figure 2.

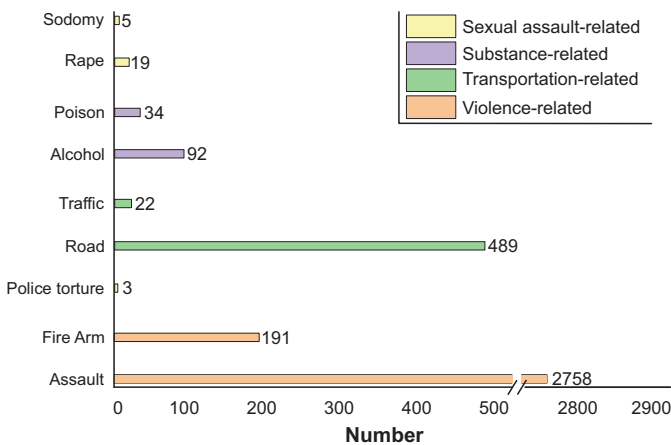


Figure 2: Number of cases in different categories

DISCUSSION

Medico-legal cases have been the subject of numerous international studies, highlighting their significance in the field. A study conducted in Saudi Arabia found that fight and physical assault or battery mainly contributed a larger proportion (83%) of medicolegal cases [1]. A study conducted by Tomar *et al.*, [8] it was found that the majority of medico-legal cases (81.84%) were accidental cases while 9.73% were categorized as suicidal cases and 8.42% as homicidal cases. However, the present study found different results, revealing that violence-related injuries accounted for the highest number of cases at 84.65%. This

was followed by transportation-related injuries at 14.65%, substance-related injuries at 3.61%, and sexual assault-related injuries at 0.69%. Similar findings have also been reported from other regions. Violence-related injuries dominated the medico-legal cases in a study conducted in Indonesia [9]. Similarly, Zaghoul and Megahed [10] reported violence as the common cause leading to homicide among Egyptian women. Violence has been referred as serious pandemic in certain parts of the world [11]. Pakistan, a country with higher rural population than urban settings and with a comparatively low literacy rates, has also been reported for substantial number of violence-related cases [12-14]. A study of 149 medico-legal cases from Punjab province of Pakistan found that a major proportion (79%) of medico-legal cases had an injury due to use of blunt as weapon of offence [14]. A descriptive cross-sectional study of 328 medico-legal profiles in Nepal [15] found distribution of violence-related cases similar to the present study. Out of 328 cases brought to the hospital for medicolegal concerns, 237 cases (72.25%) were found to have injuries, with a 95% confidence interval ranging from 67.40% to 77.09%. Among these cases, 170 (71.73%) were attributed to physical assault, while 64 (27%) were a result of accidents [15]. Interestingly, the monthly distribution of medico-legal cases also varied across different studies. For instance, Tomar *et al.*, [8] reported the highest number of cases in March (11.11%) and September (9.28%), while our study identified June (10.67%) as the month with the highest number of cases, followed by April (10.23%). These

discrepancies in findings highlight the importance of considering contextual factors and regional variations when analyzing MLC data. Research conducted by Siddappa and Datta [16] revealed different proportions of medicolegal cases, with accidental cases being the highest at 69.03%, followed by suicidal cases at 20.24% and homicidal cases at 10.72%. Similarly, Yadav and Singh [17] found assault cases to be the most prevalent at 39.6%, followed closely by accidental cases at 38.1%. In contrast, a study by Malik *et al.*, [18] identified poisoning as the most frequently observed case. This study also reported that August had the highest number of medico-legal cases at 10.41%, with road traffic accidents comprising 38% of the cases, physical assaults accounting for 32%, and sharp weapon injuries making up 19% of the cases. Sexual violence is a prevalent public health concern encompassing legal, medical, physical, psychological and social dimensions [19]. Sexual violence is described as any sexual activity or any effort to engage in sexual activity through force or coercion. This definition, as outlined by the World Health Organization (WHO), covers a range of scenarios including rape within marriage, stranger rape, sexual exploitation, abuse of individuals with disabilities, child sexual abuse, forced marriage, child marriage, denial of access to contraception or prevention of sexually transmitted diseases, and coerced abortion [20]. For millions of victims worldwide, predominantly women, it stands as a harsh and brutal reality. 19 Men can also experience sexual violence, but determining general prevalence rates remain challenging due to underreporting. Incidents of violence against men and boys often go unreported at a higher rate. In present study, least number of medico-legal cases were characterized under category of sexual assault. The sexual and domestic violence is often reported in medicolegal profiling throughout the world [21]. However, the prevalence of sexual violence is reported to be comparatively less in developing countries and, particularly, in Muslim societies [19, 22]. Thus, the characteristics of medico-legal cases in the present study are consistent to that from other developing or Islamic societies [23].

CONCLUSIONS

Violence-related injuries were found to be most commonly reported medico-legal presentations followed by transportation-related injuries in the Hyderabad region of Pakistan's Sindh province. The present study underlines the need of public awareness programs on reducing physical violence-involving clashes and increasing transportation-related safety.

Authors Contribution

Conceptualization: IB

Methodology: IB, MRS, AS, NA, AR

Formal analysis: MRS, UM,

Writing-review and editing: IB, UM, AS, NA, AR

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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