Original Research Article

Study on Medico Legal Case Pattern at Tertiary Care Hospital Hyderabad Telangana

K Srinivasulu[1], Nikhitha Puvvala[2], Pokar Nikhil Patel[3], Prodduku Aarti[4], Punyala Kavya Sree[5], Bhamidipati Janaki[6]

[1]Professor and HOD, [2,3]Tutor, [4]Internee, Department of Forensic medicine and toxicology, Malla Reddy Institute of Medical Sciences, Suraram, Hyderabad, Telangana, [5] Internee, Department of Forensic Medicine, Malla Reddy Institute of Medical Sciences, Suraram, Hyderabad, Telangana, [6]Bhamidipati Janaki, [3]rd MBBs Part-[1], Department of Forensic medicine and toxicology, Malla Reddy Institute of Medical Sciences, Suraram, Hyderabad, Telangana.

How to cite this article: K Srinivasulu, Nikhitha Puvvala, Pokar Nikhil Patel et. al. Study on Medico Legal Case Pattern at Tertiary Care Hospital Hyderabad Telangana. Indian Journal of Forensic Medicine and Toxicology/ Volume 19 No. 3, July - September 2025.

Abstract

Medico-legal cases (MLCs) involve incidents of injury or illness that require law enforcement investigation, often due to suspected criminal activities. This study aims to analyze the types and patterns of MLCs reported at a tertiary care hospital in Hyderabad, Telangana, to gain insights into injury trends and inform preventive strategies.

A retrospective, observational study was conducted at Malla Reddy Institute of Medical Sciences, Hyderabad, analyzing MLCs reported between January 1, 2021, and June 30, 2021. Data were extracted from medico-legal records, including demographic information, types of injuries (e.g., assaults, RTAs, burns), and the manner of injury (accidental, suicidal, or homicidal). Statistical analysis was performed using Microsoft Excel.

A total of 2111 MLCs were reported, with 1471 (70%) male and 640 (30%) female patients. The age group 21-30 years found the highest frequency of cases (31.4%). The majority (78.25%) of cases were from urban areas. RTA accounted for the highest proportion of cases (44.19%) followed by assaults (16.76%) and poisoning (7.01%). Other cases such as falls from height, industrial accidents, and burns, were less common. RTAs were the most frequent type of MLC, indicating the need for enhanced road safety measures. Assaults and poisoning were also significant, underscoring the need for improved mental health support and violence prevention strategies. The findings suggest the need for targeted interventions to reduce the burden of MLCs in the region.

Key word: MLC cases; Pattern; Casualty.

Corresponding Author: K Srinivasulu, Professor and HOD. Department of forensic medicine and toxicology, Malla Reddy Institute of Medical Sciences, Suraram, Hyderabad, Telangana.

E-mail: drksrinivas1968@gmail.com

Submission date: Jan 21, 2025 **Acceptance date:** March 12, 2025 **Published date: July 10, 2025**

Introduction

Medico-legal cases (MLCs) refer to incidents involving injury or illness where the attending physician, after taking the patient's history and performing an examination, deems it necessary for law enforcement authorities to investigate[1,2] the cause of the condition. These cases often involve suspected criminal activities such as burn injuries, vehicular accidents, fall from heights, assaults, suspected homicides (including firearm injuries), poisoning and sexual assault.

Road traffic accidents (RTAs) are a significant contributor to the global burden of injury. According to World health organization[3] approximately 1.19 million people die each year as a result of road traffic crashes, between 20 and 50 million more people suffer non-fatal injuries, with many incurring a disability. The global mortality rate from RTAs was 20.8 per 100,000 population. According to a report by the United Nations[4], the crude death rate between 2015 and 2020 was 7.7, with developing nations predicted to account for 90% of global traffic fatalities. Furthermore, mortality from injuries is expected to surpass that from communicable diseases in the near future.

Despite the alarming statistics, injuries are often under recognized as a major public health issue in many countries. The collection of data on injury-related cases is vital for understanding the socioeconomic impact of injuries and for the formulation of effective preventive strategies.

The aim of this study is to investigate the various categories of medico-legal cases reported to the casualty department of a hospital. Specifically, the study seeks to analyze the types of MLCs presenting at the hospital and to identify patterns in the types of injuries and offenses involved.

Materials and Methods

A retrospective and observational study on pattern of medico-legal cases reported at the Casualty Department of Malla Reddy Institute of Medical Sciences, a tertiary care hospital in Hyderabad, Telangana. The study focused on medico-legal cases reported between 1st January 2021 and 30th June 2021, six months period. Data was collected from the medico-legal records maintained by the Medical record department after obtaining permission from hospital authority.

Inclusion and Exclusion Criteria: The study included all unnatural cases reported to the Casualty Department, encompassing accidental, suicidal, and homicidal cases. Natural disease-related cases were excluded from the study.

Data Collection: The data collected from the records included demographic information (age and sex), the month-wise distribution of various medico-legal cases, types of injuries like assault, fall from height, burns, human or animal bite, and injuries due to road traffic accidents (RTAs), Hanging and drowning. The manner of the incident (Suicide, accident and homicide) also collected. The collected data was analyzed using Microsoft Excel software to identify trends and patterns related to the reported medico-legal cases.

Statistical Analysis: Data was analyzed for frequency distribution, with the aim to assess the burden of medico-legal cases in the region. The analysis will help in understanding the prevalence of different types of medico-legal issues, which will, in turn, provide valuable insights for improving infrastructure and preventive strategies within the hospital. Additionally, the findings may support law enforcement agencies in identifying critical areas for intervention to reduce the occurrence of medico-legal issues.

Results

Study on medico legal case pattern was conducted in a tertiary care teaching hospital, Hyderabad. The total number of cases reported to casualty department is 2111, for a period of six months, MLC case details were collected from medical records. The data was analyzed statistically using Microsoft Excel 2019 version. The study results are as follows

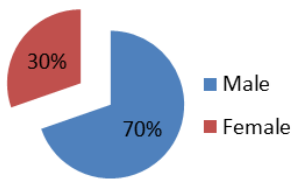

Figure 1: Showing the details of sex wise distribution of medico legal cases.

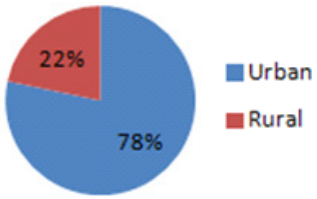

Figure 2: Medico legal case pattern distribution

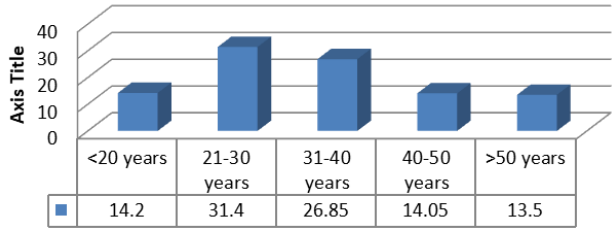

Figure 3: Age wise distribution of medico legal cases.

Urban and Rural wise.

Majority of medico legal cases are reported in the age group of 21-30 years are 31.4% Followed by, 26.85% of cases reported in age group of 31-40 years and the least number of cases were reported in above 50 years age group.

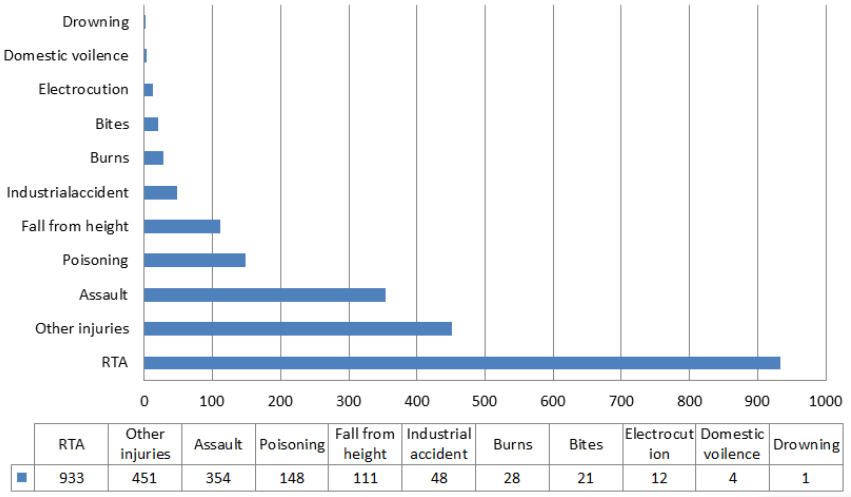

Figure 4: Pattern of distribution of medico legal cases

Maximum number of cases reported in the study is road traffic accidents 44.19%.

Discussion

This retrospective, record-based observational study was conducted at Malla Reddy Institute of Medical Sciences, Hyderabad, Telangana, to analyze the pattern of medico-legal cases (MLCs) reported to the casualty department over a period of six months. A total of 2111 case details were collected, consisting of 1471 (70%) male and 640 (30%) female patients. The study found a significant disparity in the locality of origin, with 78.25% of the cases coming from urban areas and 25.75% from rural areas.

The higher number of cases from urban localities is consistent with the hospital's location, situated in the northern part of the city, well-connected to suburban and district roads. This geographical advantage likely results in increased traffic contributing to the higher incidence of road traffic accidents. The dominance of urban areas in the study may also reflect population density, higher industrial activity, and the availability of medical facilities.

The most common pattern of MLC in this study was road traffic accidents (44.19%), followed by assaults (16.76%) and poisoning (7.01%). Other injuries (21.36%), remaining are falls from height (5.2%), industrial accidents (2.27%), and burns (1.32%), were also significant but occurred less frequently. The high incidence of RTAs aligns with the hospital's strategic location, where access to suburban and district roads contributes to traffic-related injuries. This finding is

consistent with similar studies conducted in other regions, where RTAs accounted for the majority of MLCs, highlighting the need for improved road safety measures and traffic management.

Assault-related injuries accounted for 16.76% of the cases in our study. The concentration of assault cases in urban and industrial areas mirrors the findings of other studies, such as those by Beejaysinh Rathod[5] at Govt. Medical College Vadodara. These areas often have higher socio-economic disparities and population density, which can contribute to a greater incidence of violent crimes. It is crucial to address social determinants of health and violence prevention in such settings.

Poisoning was the third most common pattern of MLC, with 7.01% of cases. The majority of poisoning cases in this study were suicidal, while accidental poisoning incidents were fewer. This pattern is consistent with national trends where suicide, particularly by poisoning, has become a significant cause of morbidity and mortality. Interestingly, no homicidal poisoning cases were reported, which may reflect the nature of poisoning being predominantly used in suicidal attempts rather than for homicidal purposes in this region.

Injuries, such as falls from height (5.2%), industrial accidents (2.27%), and burns (1.32%), contributed to the overall case load but were not as prevalent as RTAs and assaults. Industrial accidents although fewer in number, may reflect the hospital's proximity to industrial zones, which often increases the frequency of work place-related injuries. Falls from height, often resulting from construction accidents, are another area where preventive measures could significantly reduce incidents.

Injuries related to domestic violence (0.25%), electrocution (0.56%), and bites (0.99%) were reported to be relatively low in our study. Domestic violence, in particular, was under represented in comparison to studies in other urban areas, which may point to under reporting or lack of recognition of such injuries. Electrocution and bites were similarly infrequent, which may be attributed to regional differences in occupational hazards or animal-related injuries.

The pattern of medico-legal cases in our study shows similarities to findings from studies conducted in other regions of India. Several studies in India, by Dr. Manju[6] in South Kerala, Haridas SV[7], Yatoo GH[8], Dileep Kumar R[9] and Singh H[10] at Haryana revealed a similar distribution of pattern of MLC cases, with road traffic accidents and assaults being the most frequent pattern. Additionally, a study conducted by Santhosh Chadrappa Siddappa[11] at JJM Medical College Davangere in Karnataka also reported a comparable distribution of MLCs, indicating that these patterns are consistent across different geographic locations in India.

While the study provides valuable insights, there are a few limitations that should be considered. The study was conducted in a single tertiary care hospital, which may not be fully representative of all healthcare facilities in the region. The retrospective nature of the study also relies on the accuracy of records, and the possibility of under reporting or incomplete documentation exists. Furthermore, the study did not explore the socio-economic or psychological factors that may have contributed to the high incidence of suicides due to poisoning.

Conclusions

In conclusion, this study identifies road traffic accidents, assaults, and poisoning as the most common medico-legal cases in a tertiary care hospital in Hyderabad. The findings highlight the need for targeted interventions in urban and industrial settings, including road safety measures, violence prevention, and mental health support. Further studies are necessary to explore the underlying causes of these injuries and to develop strategies for prevention and intervention at both individual and societal levels. Additionally, improving data collection on domestic violence and other less-reported injuries could provide a more comprehensive understanding of medico-legal cases in the region.

Conflict of interest: Nil.

Ethical clearance: Yes, Institutional ethical clearance obtained with reference No: MRIMS-DHR-IEC-16/2022.

Source of funds: Self

Acknowledgments: We would like to express our gratitude to the casualty department staff at Malla Reddy Institute of Medical Sciences for their cooperation in data collection and analysis.

References

1. Sandeep KS, Ranjit TM, Deshpande VL, Dilip WR. Profile of medico-legal cases at a tertiary care hospital in Ahmednagar, Maharashtra. Indian J Forensic Med Pathol. 2015;8(4):113-5. doi: 10.21088/ijfmp.0974.3383.8415.1.
2. Malik R, Atif I, Rashid F, Abbas M. Analysis of 3105 medico-legal cases at a tertiary care hospital, Rawalpindi. Pak J Med Sci [Internet]. Available from: doi: 10.12669/pjms.334.11696.
3. World Health Organization. Road traffic injuries. WHO key facts [Internet]. 2023 Dec 13. Available from: https://www.who.int/news-room/ fact-sheets/ detail/road-traffic-injuries.
4. Wikipedia contributors. Mortality rate. Wikipedia, The Free Encyclopedia [Internet]. 2024 Dec 22. Available from: https://en.wikipedia.org/wiki/Mortality_rate.
5. Rathod B, B. SB. Evaluation of all medico-legal cases brought to casualty at GMC and SSG Hospital, Vadodara. Medico Legal Update. 2024;24(3):15-9.
6. Manju L, B. DN. A study on medico-legal cases attended in a tertiary care hospital in South Kerala. Int J Health Sci Res. 2018;8(4):257-60.
7. Haridas SV, Pawale DA. A retrospective study of the pattern of clinical medico-legal cases registered at a tertiary health care centre in Kolhapur district. J Forensic Med Sci Law. 2014;23(2):1-5.
8. Yatoo GH, Jalali S, Malik A, Khan A. Profile and pattern of medico-legal cases attending a tertiary care hospital in North India. Int J Med Pharm Sci. 2015;5(5):1-8.
9. Kumar RD, Siddaramanna TC, Parate SV, Hemanthraj MN. Retrospective study of the profile of medico-legal cases in Tumkur region, Karnataka. Int J Biomed Adv Res. 2015;6(4):339-40.
10. Singh H, Dhattarwal SK. Pattern and distribution of injuries in fatal road traffic accidents in Rohtak (Haryana). J Indian Acad Forensic Med. 2004;26(1):20-3.
11. Siddappa SC, D. A. A study pattern of medico-legal cases treated at a tertiary care hospital in Central Karnataka. Indian J Forensic Community Med. 2015;2(4):193-7.