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PROFILING OF MEDICO-LEGAL CASES IN TERITARY CARE HOSPITAL IN AMALAPURAM - A RETROSPECTIVE STUDY

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ABSTRACT

Background: Medico-legal cases (MLCs) constitute a significant proportion of hospital admissions, Requiring thorough documentation for legal and medical purposes. Understanding Their profile and patterns is essential for devising preventive measures. **Objective:** This study aims to analyze the profile and patterns of medico-legal cases reported at a tertiary care hospital and identify preventive strategies to reduce their occurrence. **Methods:** A retrospective, hospital-based study was conducted at KIMS & RF, Amalapuram over six months (September 2024-February 2025). The study included all MLCs recorded in the MLC register, excluding cases with incomplete or missing data. Data were collected from inquest papers, medico-legal case registers, and accident registers. Confidentiality was maintained, and ethical approval was obtained. Data were Analyzed using IBM SPSS software. **Results:** A total of 633 medico-legal cases were recorded, categorized by type, age, and gender. Road Traffic Accidents (RTAs) were the most prevalent (455 cases), with a higher incidence in males (378) than females (77). Other cases included suicide (41Cases), accidental poisoning (4 cases), drowning (3 cases), burn injuries (16cases), electrocution (10 cases), hanging (7 cases), animal bites (13 cases), falls (61 cases), and assault (23 cases). The majority of cases involved males, indicating gender- related risk factors. **Conclusion:** RTAs constituted the highest number of MLCs, highlighting the need for enhanced road safety measures. Suicide and assault cases emphasize the importance of mental health awareness and crime prevention strategies. Public health interventions, stricter law enforcement and awareness programs are crucial to reducing the incidence of medico-legal cases in the region

KEYWORDS: Medico-legal cases, Retrospective study, Road traffic accidents, Forensic medicine, Injury

INTRODUCTION

A medico-legal case (MLC) is defined as a case of injury or ailment where some criminality is involved.[1] The casualty department frequently deals with various medico-legal cases such as road traffic accidents, burn injuries, poisoning, and sudden deaths. These cases require legal scrutiny in addition to medical intervention to determine causation, liability, and any legal proceedings that may follow.[2]

A medico-legal case arises from an unnatural incident causing physical harm, necessitating intervention and legal resolution.[3] Profiling medico-legal cases to assess their patterns and magnitude is an integral aspect of emergency medical care, aiding in the formulation of preventive strategies to reduce casualties in the future.[4]

In the present study conducted at KIMS & RF, Amalapuram, an effort has been made to analyze the various medico-legal cases recorded over a six-month period. The hospital caters to a large number of cases, given its strategic location and patient influx from both urban and rural areas. Identifying the predominant causes, demographic patterns, and trends in medico-legal cases at our institution will help in understanding the medico-legal challenges faced by the region. Furthermore, these findings will contribute to policy-making, medico-legal training for healthcare professionals, and the development of preventive measures.

AIMS AND OBJECTIVES

The study was conducted to:

- Analyze the profile and patterns of medico-legal cases reported at KIMS & RF, Amalapuram.
- Determine preventive measures to reduce the occurrence of medico-legal cases in the future.
- Assess the demographic and epidemiological trends of medico-legal cases.
- Provide recommendations for improving medico-legal documentation and management.

MATERIAL AND METHODS

- **Study Design:** Hospital-based retrospective study.
- **Study Setting:** KIMS & RF, Amalapuram.
- **Study Participants:** All medico-legal cases (MLCs) recorded in the hospital's medico-legal register.
- **Study Duration:** Six months (September 2024 – February 2025).
- **Study Size:** All recorded medico-legal cases during the study period.
- **Sampling Technique:** Convenience sampling.
- **Inclusion Criteria:** All medico-legal cases recorded in the medico-legal register.
- **Exclusion Criteria:** Cases with incomplete or missing data.
- **Data Collection Procedure:** Data was collected from inquest papers, medico-legal registers, and accident registers. Additional clinical details were obtained from hospital records where necessary.
- **Confidentiality:** The personal details of all subjects were kept confidential. Only summarized data were used for analysis and reporting.
- **Ethical Considerations**

1. Institutional ethics committee approval was obtained.
2. Informed consent was taken from the Medical Superintendent, KIMS & RF, Amalapuram.

- **Data Analysis and Interpretation:** Data was entered into Microsoft Excel 2016 and analyzed using IBM SPSS software. Statistical significance was assessed with appropriate tests.

RESULTS

A total of 633 medico-legal cases (MLCs) were recorded and categorized based on type, age, and gender. The findings are as follows:

- **Road Traffic Accidents (RTAs)** accounted for the highest number of cases (455), with a male predominance (378 males vs. 77 females).
- **Accidental Poisoning** cases were reported in 4 instances, affecting more males (3 cases) than females (1 case).
- **Suicide** cases were 41, with a higher prevalence among males (28 cases) compared to females (13 cases).
- **Drowning** was the least common category, with only 3 cases, all involving males.
- **Burn Injuries** were recorded in 16 cases, with a male predominance (10 cases vs. 6 cases in females).
- **Electrocution** cases were 10, with 9 males and 1 female affected.
- **Hanging** was reported in 7 cases, with males (4 cases) slightly more than females (3 cases).
- **Animal Bites** accounted for 13 cases, predominantly in males (10 cases vs. 3 females).
- **Falls** were recorded in 61 cases, affecting 47 males and 14 females.
- **Assault** cases accounted for 23 incidents, with more males (16 cases) than females (7 cases).

The most affected age group was **20 to 40 years** (308 cases, 48.7%), followed by **40 to 60 years** (170 cases, 26.9%). Extreme age groups were less involved in medico-legal cases.

The statistical analysis showed that the p-value obtained was **0.02**, which is less than **0.05**, indicating statistical significance.

Table 1: Distribution of Medico-Legal Cases Based on Type.

Type of mlc	Total	Male	Female
Rta	455	378	77
Suicide	41	28	13
Fall	61	47	14
Accidental Poisoning	4	3	1
Assault	23	16	7
Burns	16	10	6
Hanging	7	4	3
Electrocution	10	9	1
Hanging	7	4	3
Drowning	3	3	0
Total	633	508	125

Table 1
Shows the distribution of medico-legal cases and also gender distribution of each case
The most number of MLCs noted are RTAs 455 cases with 378 males involved

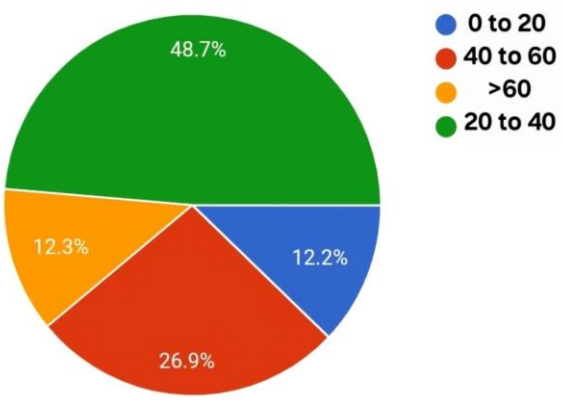

Figure 1.

Figure 1 show the distribution of cases on bases of age groups 20 to 40 years age group are noted to be the most affected group

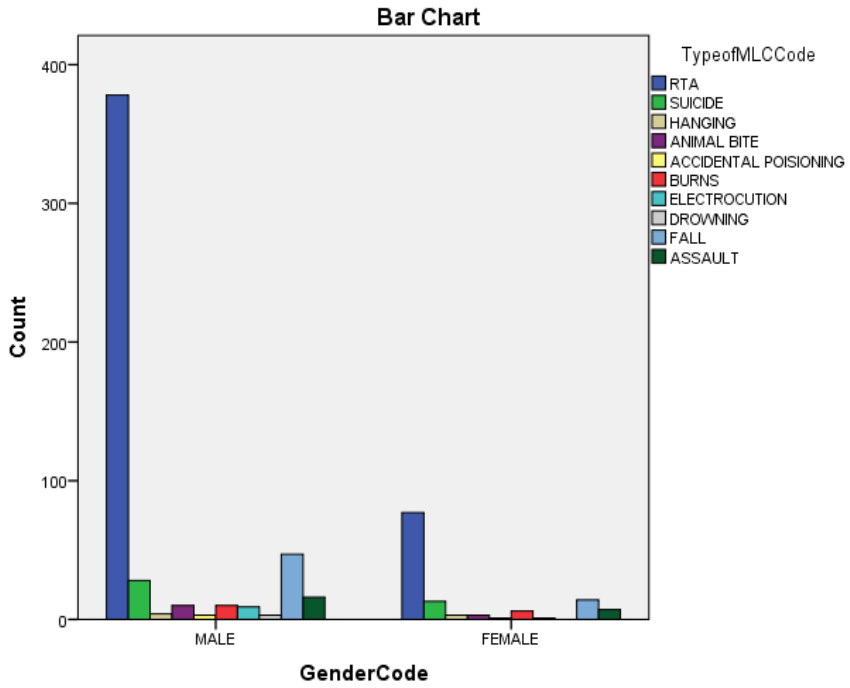

Figure2.

Figure 2 depicts the distribution of medico-legal cases based on gender Males are seen to be the most involved gender

DISCUSSION

The present study, conducted at KIMS & RF, Amalapuram, aimed to analyze the profile and patterns of medico-legal cases (MLCs) over a six-month period. The findings highlight road traffic accidents (RTAs) as the predominant cause, followed by falls, suicides, and other medico-legal incidents.

Our study findings are consistent with previous research, particularly with road traffic accidents (RTAs) being the most frequent cause (136 cases; 70%), significantly affecting males (112 cases) compared to females (24 cases).

Fall was the second most common cause (61 cases), with a higher prevalence among males (47 cases) than females (14 cases).

Suicide was the third most common cause (41 cases), with a higher prevalence among males (28 cases) than females (13 cases).

Other notable causes included Assault (23 cases, male-to-female ratio of 2:1) Burns (16 cases, predominantly male), and less frequent incidents like animal bites, electrocution, hanging and drowning.

RTAs are identified as majority of the MLCs (71.9%) in unison with Dake Rajesh et al. (73.9%) Jitendra Tomar et al. (81.84%) and Singh N et al. (51.89%)

Similarly, males were the majority in our study (80.3% of cases). Corresponding with Jitendra Tomar et al. (75.3%) and Singh N et al. (72.01%)

20 to 40 years is the most common age group involved in MLCs (48.7%) similar to the reports of Dake Rajesh et al. (47.8%) Jitendra Tomar et al. (56.08%) and Singh N et al. (51.6%)

It is also note worthy that this age group presented with more injury related MLC'S like road traffic accidents, falls and assaults. This seems to be relevant in context to our society where adults in this age group lead more active life and are entrusted with more outdoor responsibilities thus justifying a high number of 308 cases in this age group. The findings of our study are in concordance with the studies by other

The predominance of RTAs in this study reflects the critical need for stricter enforcement of traffic laws, improved road infrastructure, and public awareness campaigns targeting reckless driving.

Gender disparities across categories, particularly male dominance in RTAs, drowning, and hanging, highlight occupational hazards, risk-taking behaviors, and cultural norms.

The statistical significance in Dake Rajesh et al.'s ANOVA results further supports the reliability of observed variations in medico-legal case patterns.

CONCLUSION

- This study provides **valuable epidemiological insights** into the medico-legal cases reported at **KIMS & RF, Amalapuram**, aligning with findings from previous research.
- RTAs remain the **most common cause** of medico-legal cases, necessitating road safety interventions.
- The **20-40 years age group** is most vulnerable, emphasizing the need for preventive measures targeting young adults.
- The gender-based distribution of medico-legal cases reflects **occupational hazards, societal roles, and cultural factors**.
- There is a pressing need for **public health initiatives** to reduce the occurrence of suicides, falls, and burn injuries.

RECOMMENDATIONS

1. **Road Safety Measures**
   - Strict enforcement of traffic laws.
   - Improved road infrastructure and pedestrian safety measures.
   - Public awareness campaigns on helmet and seatbelt use.
2. **Mental Health Interventions**
   - Accessible mental health counselling.
   - Suicide prevention programs.
   - Stricter control of toxic substance availability.
3. **Community Awareness Programs**
   - Education on drowning prevention and fire safety.
   - Awareness initiatives on electrocution and occupational hazards.
4. **Data Collection and Research**
   - Conduct further region-specific studies.
   - Implement a **standardized medico-legal reporting system**.

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