

## ORIGINAL RESEARCH

**Profile of medico-legal cases admitted at a tertiary care hospital: A cross sectional study**

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**Abstract**

**Background:** Medico-legal cases in a particular health set up is an important and unavoidable bulk. It requires proper dealing in both examination and documentation. Classification and tabulation of these cases under certain categories is crucial for evaluating the current pattern. This categorisation benefits the law-and-order authorities to enact norms and policies accordingly.

**Methods:** This is a retrospective study conducted at Rohilkhand Medical College and Hospital, Bareilly by the department of Forensic Medicine & Toxicology in collaboration with the Medical Record Section. Medico-Legal Cases examined by doctors attending in the casualty of the hospital were taken. Medico-legal case file and electronic medical record data saved in the (MRD) medical records department were looked for cases segregated as Medico-Legal Cases with Medico-Legal Reports for a duration of one year from 01-July-2023 to 30-June-2024. Both percentage and numbers of the evaluated data are mentioned.

**Results:** Total 456 cases were reported during 01-July-2023 to 30-June-2024. Among the 456 cases reported, 32.00% were among the age group of 21-30 years. Most of the medico-legal cases registered were of males (73.50 %). The number of cases from rural areas were more (73.00%). Road Traffic accidents (RTA) accounted for 64.70% of the cases followed by poisoning/drug reaction cases (13.20%). Among the RTA cases, the age group of 21-30 years were the most vulnerable.

**Conclusion:** Evaluation of the Medico-legal Cases needs focused observation and meticulous recording with proper documentation. Health care staffs including doctors should undergo proper training so that the faults and mistakes can be minimised, thus aiding the legal authorities to manage this bulk efficiently.

**Keywords:** Medico-legal; accident; documentation; law; pattern.

## Introduction

A medico-legal case (MLC) is a case of some injury, assault or illness in which the examining doctor feels the need of investigation by law enforcement agencies to fix the responsibility regarding the said injury or medical condition.<sup>1</sup>

After obtaining a brief clinical history and doing clinical examination of the patient, the doctor may require the police or magistrate to inquire in it further and can also refer to the physician for medical expert opinion to help in the administration of justice.<sup>2</sup>

Cases of road traffic accidents, accidental falls, injuries caused by fights among people or physical assault, self-inflicted injuries, battery, poisonings, burns, bites, sudden death, operative death, deaths with suspicion of foul-play, cases brought by police or referred from court and others coming to medical emergency department have legal implications<sup>1,3</sup> The examining doctor notes and describes all the clinical findings and gives his expert opinion<sup>4</sup>. This expert opinion when presented in court of law is helpful to give justice to the victim and free the innocent from false allegations<sup>5,6</sup>.

It is the responsibility of the doctor to properly judge the cases and when there is a suspicion inform police or magistrate so that a legal statement of the patient can be taken. In the casualty i.e. the medical emergency room, every patient is primarily seen by the casualty medical officer. According to the age, gender, type of injury or illness; speciality medical officer from department of medicine, gynaecology, surgery, paediatrics may be needed for proper examination and management.

The present study brings into light the pattern and profile of medico-legal cases coming to our casualty department which will provide important descriptive data for administrative and management purpose. It will also help to develop and improve protocols to be followed in casualty for administrative management of medico-legal cases.

## Aim

To analyse the profile of medico-legal cases admitted at a tertiary care hospital

## Objectives

1. To assess socio-demographic profile of medico-legal cases reporting at tertiary care hospital in terms of:
  - a. Age and sex variation of different medico-legal cases.
  - b. Seasonal variation of different medico-legal cases.
  - c. Area wise (rural and urban) distribution of medico-legal cases.

## Materials and methods

### Study Design

Cross - sectional study

### Study Setting and Data Collection

This study was conducted at Rohilkhand Medical College and Hospital, Bareilly by the department of Forensic Medicine & Toxicology in collaboration with the Medical Record Section.

Approval from the Institutional Ethics Committee was taken.

Permission of the hospital administration was taken to access, collect and analyse the data for the study.

Medico-Legal Cases examined by doctors attending the casualty of the hospital were taken. Medico-legal case file and electronic medical record data saved in the (MRD) medical records department were looked for cases segregated as Medico-Legal Cases with Medico-Legal Reports for a duration of one year from 01-July-2023 to 30-June-2024.

Identity of the subjects was kept confidential in the collected data. Study Parameters and data required for studying the Medico-Legal Cases like demographic details of the patients (age, sex and address), nature and type of injuries, mentioned on Medico-Legal Reports were noted.

### Statistical Analysis

Data was collected and entered into MS Excel sheet. The data was imported in SPSS(statistical Package for Social Sciences) licensed version 23.0. Descriptive analysis was done by calculating mean, proportions, percentage.

### Results

**Table No. 1: MLC in relation to age group**

AGE group	Frequency	Percentage%
<b>1-10 YEARS</b>	31	6.8
<b>11-20 YEARS</b>	84	18.4
<b>21-30 YEARS</b>	146	32.0
<b>31-40 YEARS</b>	81	17.8
<b>41-50 YEARS</b>	67	14.7
<b>51-60 YEARS</b>	32	7.0
<b>&gt;60 YEARS</b>	15	3.3
<b>Total</b>	456	100.0

Medico-legal cases mostly found in 21-30 years age group 146 (32.0 %) than in 11-20 years age group 84 (18.4%) than in 31-40 years age group 81 (17.8%) next is 41-50 years age group 67 (14.7%) than in 51-60 years age group 32 (7.0%) and minimum in >60 years age group 15 (3.3%)

**Table No. 2: MLC in relation to locality**

Locality	Frequency	Percentage%
<b>Rural</b>	333	73.0
<b>Urban</b>	123	27.0
<b>Total</b>	456	100.0

Medico-legal cases mostly found in rural area 333 (73.0%) and minimum in urban area 123(27.0%)

**Table No. 3: Medico-legal cases according to sex**

SEX	Frequency	Percentage%
<b>FEMALE</b>	121	26.5
<b>MALE</b>	335	73.5
<b>Total</b>	456	100.0

Mostly medico-legal cases involved males 335 (73.5%) as compared to females 121 (26.5%)

**Table No. 4: Medico-legal cases according to causes**

Parameter	Frequency	Percentage%
<b>RTA</b>	295	64.7
<b>FALL FROM HEIGHT</b>	49	10.7
<b>FIGHTING</b>	32	7.0

<b>POISONING/DRUG REACTION</b>	60	13.2
<b>BURN</b>	12	2.6
<b>ANIMAL BITE</b>	4	0.9
<b>SNAKE BITE</b>	5	1.1

Maximum cases were of Road traffic Accidents 295 (64.7%), Poisoning/ Drug Reaction 60 (13.2%), Fall from height 49 (10.7%), fighting 32 (7.0%) Burn 12 (2.6%), Snake bite 5 (1.1%) and minimum were of Animal bite 4 (0.9%)

**Table No. 5: Cumulation**

<b>AGE group</b>	<b>RTA/%</b>	<b>FALL FROM HEIGHT/%</b>	<b>FIGHTING /%</b>	<b>POISONING/DRUG REACTION/%</b>	<b>BURN /%</b>	<b>ANIMAL BITE/%</b>	<b>SNAKE BITE/%</b>
<b>1-10 YEARS</b>	22/07.46	2/04.08	1/03.45	1/01.96	0/00.00	0/00.00	1/20.00
<b>11-20 YEARS</b>	55/18.64	7/14.29	8/27.59	7/13.73	5/41.67	1/25.00	1/20.00
<b>21-30 YEARS</b>	91/30.85	18/36.74	10/34.48	18/35.29	5/41.67	1/25.00	1/20.00
<b>31-40 YEARS</b>	50/16.95	9/18.37	2/06.90	13/25.49	1/08.33	2/50.00	2/40.00
<b>41-50 YEARS</b>	46/15.59	6/12.24	6/20.69	6/11.76	1/08.33	0/00.00	0/00.00
<b>51-60 YEARS</b>	21/07.12	5/10.20	1/03.45	4/07.84	0/00.00	0/00.00	0/00.00
<b>&gt;60 YEARS</b>	10/03.39	2/04.08	1/03.45	2/03.93	0/00.00	0/00.00	0/00.00
<b>Total</b>	295/100.00	49/100.00	29/100.00	51/100.00	12/100.00	4/100.00	5/100.00
<b>SEX</b>	<b>RTA/%</b>	<b>FALL FROM HEIGHT/%</b>	<b>FIGHTING /%</b>	<b>POISONING/DRUG REACTION/%</b>	<b>BURN /%</b>	<b>ANIMAL BITE/%</b>	<b>SNAKE BITE/%</b>
<b>Female</b>	68/23.05	15/30.61	12/41.38	15/29.41	2/16.67	2/50.00	2/40.00
<b>Male</b>	227/76.95	34/69.39	17/58.62	36/70.59	10/83.33	2/50.00	3/60.00
<b>Total</b>	295/100.00	49/100.00	29/100.00	51/100.00	12/100.00	4/100.00	5/100.00
<b>U/R</b>	<b>RTA/%</b>	<b>FALL FROM HEIGHT/%</b>	<b>FIGHTING /%</b>	<b>POISONING/DRUG REACTION/%</b>	<b>BURN /%</b>	<b>ANIMAL BITE/%</b>	<b>SNAKE BITE/%</b>
<b>Rural</b>	222/75.25	32/65.31	17/58.62	35/68.63	10/83.33	2/50.00	5/100.00
<b>Urban</b>	73/24.75	17/34.69	12/41.38	16/31.37	2/16.67	2/50.00	0/00.00
<b>Total</b>	295/100.00	49/100.00	29/100.00	51/100.00	12/100.00	4/100.00	5/100.00
<b>P-VALUE</b>							

Table No. 5 shows maximum cases of Road Traffic Accidents 91 (30.85%) in 21-30 years age group and minimum 10 (03.39%) in > 60 years age group, maximum cases Fall from height 18 (36.73%) in 21-30 years age group and minimum 2 (04.08%) in 1-10 years and >60 years age group, maximum cases of fighting 10 (34.48%) and minimum cases 1 (03.45%) were in 1-10,51-60 and >60 years age group, maximum cases of poisoning/ drug reaction 18(35.29%) were in 21-30 years age group and minimum 1(01.96%) in 1-10 years age group maximum cases of burn 5 (41.67%) were in 11-20 and 21-30 years age and minimum 01(08.33%) in 31-40, and 41-50years age group. Cases of burns were nil in other

age groups. Maximum cases of animal bite 2 (50.00%) were found in 31-40 years age group and minimum 01(25.00%) in 11-20, 21-30 years age group. Cases of animal bite were nil in other age groups. Maximum cases of snake bite 2 (40%) were found in 31-40 years age group and minimum 01(20.00%) in 01-10, 11-20 and 21-30 years age group.

Maximum Road traffic accident 227(76.95%) were found in males as compared to 68 (23.05%) were found in females, maximum fall from height 34 (69.39%) were found among males while in females 15(30.61%), maximum fighting were found among males 17 (58.62%) and in females 12 (41.38%), maximum poisoning/ drug reaction 36(70.59%) while in female 15 (29.41%), maximum burn cases 10 (83.33%) were found among males while in females 2 (16.67%), animal bite cases 2 (50.00%) were found in both males and females equally and maximum snake bite cases 3 (60.00%) were found among males as compared to 2(40.00%) in females.

Maximum road traffic accidents 222(75.25%) among rural population as compared to 73 (24.75%) in urban population, maximum cases of fall from height 32 (65.30%) in rural area as compared to 17 (34.70%) in urban, maximum cases of fighting 17 (58.62%) in rural area as compared to urban area 12 (41.38%), maximum cases of poisoning 35 (68.63%) in rural area as compared to 16 (31.37%) in urban area, maximum burn cases 10(83.33%) were found in rural area as compared to 2 (16.67%) in urban area, animal bite 2(50.00%) were found equally in both urban and rural area, maximum snake bite 5(100.00%) were found in rural area while no case in urban area.

## Discussion

In our study we found most medico-legal cases were in 21-30 years (32%) age group followed by 31-40 years (17.8%) and minimum cases were in >60 years 3.3%). Similar finding was reported by Trangadia MM *et al*<sup>(7)</sup> maximum cases in 21-30 years (32.10%) followed by 31-40 years (20.76%) age group and least in > 60 years (3.59%), Madadin M *et al*<sup>(8)</sup> reported maximum medico-legal cases in (63.4%) in 18-35 years age group, Malik R *et al*<sup>(9)</sup> also found maximum cases in 21-30 years (42%) age group and minimum in >40 years (12%) age group, Manju L *et al*<sup>(10)</sup> also found maximum number of medico-legal cases in 20-30 years (29.7%) followed by 30-40 years (19.3%), Singh JP *et al*<sup>(11)</sup> found maximum cases in 21-30 years (25.63%) age group followed by 31-40 years (16.94%) age group, Brahmkar TR *et al*<sup>(12)</sup> reported maximum cases in 21-30 years (3.2%) age group.

In our study we found maximum number of cases among males 335(73.5%) as compared to females 121 (26.5%). Same observation were reported by Trangadis MM *et al*<sup>(7)</sup> in males 72.77%), Madadin M, Algarzale AA<sup>(8)</sup> in males (71.5%) and in females (28.5%) Jagtap N *et al*<sup>(13)</sup> reported MLC in males (79.4%) and in females 20.6%). (Sushil MPK *et al*<sup>(13)</sup> found in males (64%) and in females (36%).

In our study we found 73% cases in rural area as compared to 27% in urban area in contrast Brahmkar TR<sup>(12)</sup> found 61.27% in urban area.

In our study we found maximum cases of road traffic accidents 64.7% and out of which maximum cases 30.58% were in 21-30 years age group, in males 76.95% and in rural 75.25% Malik R<sup>(9)</sup> also reported maximum cases of road traffic accidents and in males but higher cases in urban population as compared to rural, Manju L *et al*<sup>(10)</sup>, Singh JP *et al*<sup>(11)</sup> also reported maximum case of road traffic accidents, in contrast Brahmkar TR *et al*<sup>(12)</sup> Madadin M *et al*<sup>(8)</sup> reported maximum cases were due to assault and fight respectively and not road traffic accident.

## Conclusion

In present study most cases were found in 21-30 years (32%) age group, this may be because of aggressive behaviour and lack of tolerance. In males maximum cases (73.5%) were found

due to activity of day today, and indulgence more in violent activities therefore more vulnerable to tense situation and exposed to more medico-legal cases.

Maximum cases (73%) were found among rural population as urban population is busy in earning bread and butter while rural population has free time and more indulge in fighting and court cases so more chances for medico-legal cases. most cases of road traffic accident (64.70%) may be due to increasing load on roads due to population explosion and increase in numbers of vehicles due to private transportation as compared to public transport in India and maximum number of road traffic accidents (30.58% among 21-30 years age group, in males may be due to higher cases in this group. road traffic accidents were higher in urban area may be due to traffic congestion and population density in urban area. Fall from height, fighting, poisoning, burn, snake bite are seen more in males of rural area as compared to urban area. With data analysed by this study we can assess the need for training for the doctors of various speciality so that medico-legally correct documentation of clinical findings can be done.

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