

PREVALENCE AND PATTERN OF MEDICO-LEGAL CASES IN EMERGENCY DEPARTMENT OF A TERTIARY CARE CENTRE IN KATHMANDU, NEPAL

Urmila Bharati and Upashana Regmi

¹Department of Emergency, Nepal Medical College Teaching Hospital, Attarkhel, Gokarneswar-8, Kathmandu, Nepal

ABSTRACT

Medico-legal cases are essential component of medical practice and comprise important cases in emergencies. The objectives of this study was to assess the frequency and pattern of medico-legal cases and to identify the vulnerable gender, age group, outcome and the duration of stay in the Emergency Department of Nepal Medical College Teaching Hospital in Kathmandu. Medico-legal cases visiting emergencies from 1st March 2020 to 28th February 2021 were recorded using a proforma. During this period, a total of 1,176 medico-legal cases were registered (10.5% of the total emergency attendance; n=11,212) with 68.0% males and 32.0% females. Maximum number of cases belonged to the age group of 21 - 30 years (n=378; 32.1%) followed by 31 - 40 years (n=271; 23.0%). Most common medico-legal diagnosis was physical assault (n=389; 33.1%) followed by road traffic accidents (n=379; 32.2%). Majority of cases were accidental in nature (47.5%). Most of cases (56.1%) were discharged, 13.8% cases were admitted in different specialties for further management, 8.3% cases were referred to other centers and 21.7% cases left against medical advice. The length of stay was 15 minutes to 24 hours (mean 2.58 hours, SD 1.61). Most of the cases needed surgical consultation.

KEYWORDS

Medico-legal case, physical assault, road traffic accidents, Kathmandu

Received on: April 04, 2023

Accepted for publication: August 07, 2023

CORRESPONDING AUTHOR

Dr. Urmila Bharati
Associate Professor,
Department of Emergency,
Nepal Medical College Teaching Hospital,
Attarkhel, Gokarneshwor-8, Kathmandu, Nepal
Email: ubharati_ub@yahoo.com
Orcid No: <https://orcid.org/0009-0008-2829-2099>
DOI: <https://doi.org/10.3126/nmcj.v25i3.58729>

INTRODUCTION

Medico-legal case is a case of injury or illness where the attending doctor, after eliciting history and examining the patient, thinks that some investigation by law enforcement agencies is essential to establish and fix responsibility for the case in accordance with the law of the land.¹ Medico-legal cases are essential component of medical practice and comprise most important constituent of emergencies.² Emergency Department of a hospital is an important entry point of almost all of the medico-legal cases and all of the medical and surgical emergencies. For the doctors working in the Emergency Department, it is equally important to identify and document the medico-legal cases apart from dealing with the emergencies. Many of the medico-legal cases require prompt emergency management as well. Though this increases the work load in the Emergency Department, documentation of medico-legal cases is very important. This also helps save the attending doctor from unnecessary and needless allegations in future. Additionally, studying the profile and patterns of these cases will depict the real scenario about the burden of the medico-legal cases and identifying ways for better management of these cases, which will finally help to reduce the work load in the Emergency Department. The data hence generated may be helpful to emphasize the need for implementation of effective preventive measures for reduction of medico-legal issues at national level. In this paper we report the frequency and pattern of medico-legal cases reported at the Emergency Department of tertiary care hospital in Kathmandu, Nepal.

MATERIALS AND METHODS

This cross sectional study was carried out in the Emergency Department of Nepal Medical College Teaching Hospital, Attarkhel, Gokarneswaor-8, Kathmandu, Nepal. Data was collected from all the cases registered as medico-legal case from 1st March 2020 to 28th February 2021 i.e. one year duration. The following cases which fell into category of medico-legal cases were included.

1. All cases of injuries and burns -the circumstances of which suggest commission of an offense by somebody.
2. All vehicular, factory or other unnatural accident cases specially when there is a likelihood of patient's death or grievous hurt.
3. Cases of suspected or evident sexual assault.

4. All cases of suspected or evident poisoning or intoxication.
5. Cases brought dead with improper history creating suspicion of an offense.
6. Cases of suspected self-infliction of injuries or attempted suicide.
7. Cases of suspected or evident criminal abortion.
8. Cases of unconsciousness where its cause is not natural or not clear.
9. Cases referred from a court or otherwise for age estimation.
10. Any other case not falling under the above categories but has legal implications.

In addition, information on age, gender, type of medico-legal case, consultation from other departments, outcome and total length of stay in emergency were recorded in a proforma. The study variables were analyzed with descriptive statistics using software SPSS-17 and Microsoft excel. Ethical approval was taken from the Institutional Review Committee (IRC) of Nepal Medical College prior to study.

RESULTS

A total of 1,176 medico-legal cases were registered in the Emergency Department during this one year period. This was 10.5% of the total emergency attendance (n=11,212). Males outnumbered the females with 799 (68.0%) and 377 (32.0 %), respectively. Age varied from 3 days old to 87 years old. Maximum number of cases belonged to the age group of 21 to 30 years (n=378; 32.1%) followed by 31 to 40 years (n=271; 23.0%) (Table 1).

Table 1: Age group and gender distribution of cases

Age in years	Gender		Total n (%)
	Males	Females	
0-10	63	48	111 (9.4)
11-20	105	57	162 (13.8)
21-30	281	97	378 (32.1)
31-40	182	89	271 (23.0)
41-50	80	36	116 (9.9)
51-60	46	23	69 (5.9)
61-70	23	19	42 (3.6)
>70	19	8	27 (2.3)
Total	799	377	1176

Table 2: Medicolegal diagnosis according to age group and gender

Age (years)	Physical assault		RTA		Fall		Poisoning		Brought dead		Self inflicted cuts	
	M	F	M	F	M	F	M	F	M	F	M	F
0-10	1	0	32	21	20	15	3	6	5	4	0	0
11-20	40	19	35	14	13	4	6	12	1	0	3	1
21-30	127	33	90	26	23	11	21	19	5	5	11	2
31-40	75	35	61	30	16	7	13	5	9	10	4	2
41-50	35	6	29	15	3	3	5	4	7	8	1	0
51-60	9	5	8	5	13	5	2	3	14	4	0	0
61-70	0	4	6	4	6	1	4	4	7	6	0	0
>70	0	0	3	0	6	0	0	0	10	8	0	0
Total	287	102	264	115	100	46	54	53	58	45	19	5

Table 3: Medico-legal diagnosis and their outcomes

Medico-legal diagnosis	Outcome					Total
	Discharged	Admitted	Referred	LAMA	Expired	
Physical assault	267	27	12	83	0	389
RTA	253	44	18	64	0	379
Burn	3	1	4	0	0	8
Fall	57	24	24	41	0	146
Machinery injuries	3	2	3	1	0	9
Hanging	0	3	2	1	0	6
Poisoning	3	45	23	35	1	107
Self inflicted cuts	14	2	0	8	0	24
Bites	2	0	1	0	0	3
Sexual assault	0	0	2	0	0	2
Total	602 (56.1%)	148 (13.8%)	89 (8.3%)	233 (21.7%)	1 (0.1%)	1073

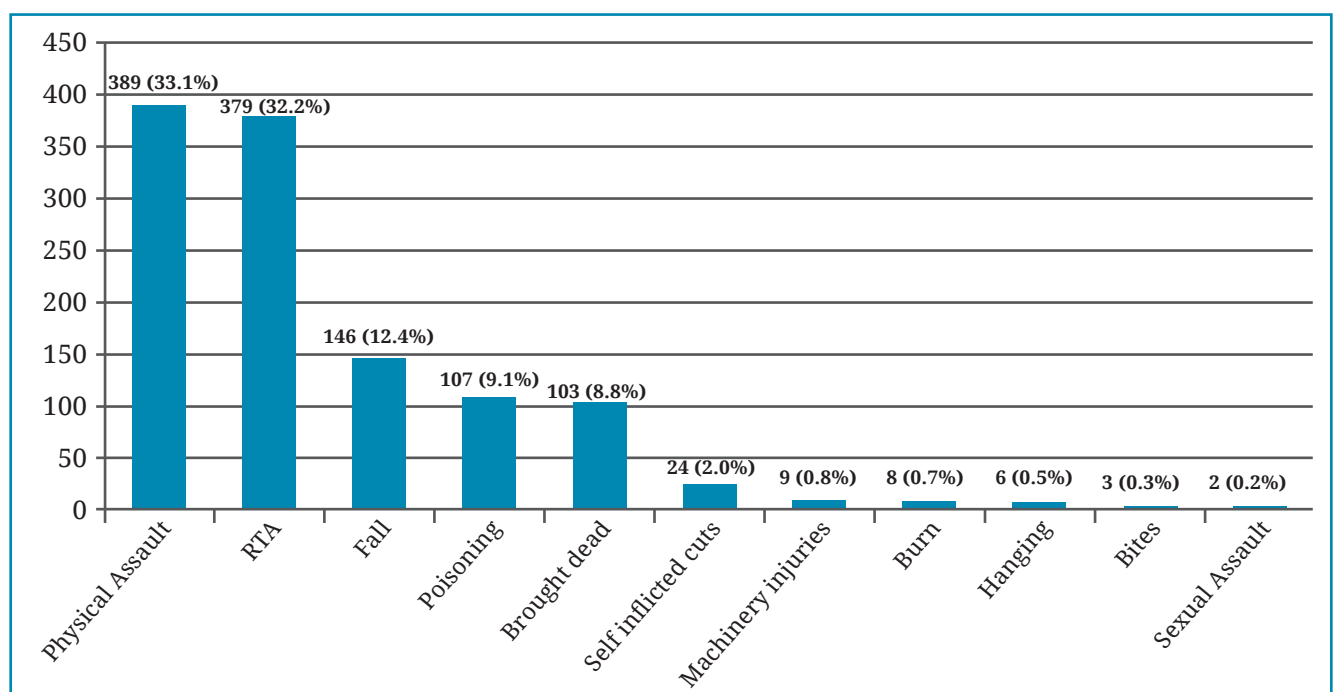
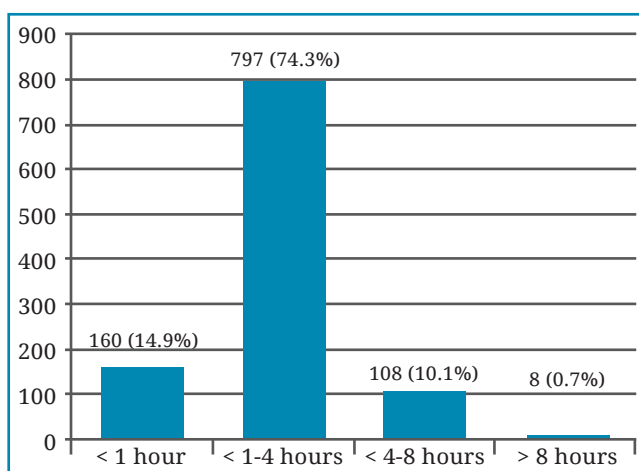


Fig. 1: Type of medico-legal cases

Table 4: Consultations from other departments/ specialties

Departments consulted	Cases n (%)
Surgery	324 (48.6)
Orthopedic	285 (42.7)
Medicine	92 (13.8)
ENT	33 (5.0)
Pediatric	10 (1.5)
Ophthalmology	11 (1.6)
Psychiatry	14 (2.1)
Gynecology	2 (0.3)

**Fig. 2:** Duration of stay in emergency department

Most common medico-legal diagnosis was physical assault (n=389; 33.1%) followed by road traffic accidents (n=379, 32.2%), fall from height (n=146; 12.4%), poisoning (n=107; 9.1%) and brought dead (n=103; 8.8%) (Fig. 1).

Males predominated in all 6 common medico-legal conditions. Maximum number of cases of physical assault, road traffic accidents, fall from height, poisoning and self inflicted cuts were seen in the age group of 21 - 30 years. However, brought dead cases were more in the age group of 31 - 40 years (19 cases) followed by 51 - 60 years and >70 years with 18 cases each (Table 2).

Majority of cases were accidental in nature (47.5%) followed by inflicted by others (33.3%) and self inflicted (10.2%). Regarding the outcome of the medico-legal cases, majority of cases (56.1%) were discharged after treatment in the Emergency Department, 13.8% cases were admitted in different specialties for further management, 8.3% cases were referred to other centers for further management and 21.7% cases left against medical advice. Single case of poisoning succumbed during

management in the Emergency Department (Table 3).

Minimum time of stay of the cases was 15 minutes and maximum was 24 hours, mean being 2.58 hours with SD of 1.61. Maximum number of cases (n=797; 74.3%) were disposed from emergency within 1 to 4 hours of entry. Only eight cases stayed in the emergency for more than 8 hours duration (Fig. 2).

Five hundred and nine cases (43.3%) were not consulted with other specialties as most of them did not need it, 20.0% of those not consulted were brought dead cases and few of them left against medical advice without the consultation. Among the consulted cases (n=667; 56.7%), maximum cases needed surgical consultation (n=324; 48.6%) and out of which 261 cases i.e. 80.0% needed neurosurgery consultation because of injuries on head region. Second common consultation was from orthopedic (n=285; 42.7%). Most of the cases of physical assaults, road traffic accidents and fall from height required consultation from both surgery and orthopedic department. Cases of facial injuries required consultation from otolaryngology and ophthalmology departments as well. Cases of different types of poisoning had physician consultation and cases of self-inflicted cuts and suicidal attempts had psychiatry consultation. Most cases of road traffic accidents had consultations from multiple specialties, mostly orthopedic and neurosurgery (Table 4).

DISCUSSION

In this study, in a one year period 1,176 medico-legal cases attended the Emergency Department, which came out to be 10.5% of all cases attending the Emergency Department. This finding was similar to that from Eastern region of Nepal, where medico-legal cases comprised almost 10.0% of all cases at the Emergency Department.³ It was concluded in one study that medico-legal cases constitute substantial proportion of workload in emergency department of tertiary hospitals.⁴ Medico-legal service in Nepal is still not well developed as limited number of forensic medicine expertise in the country puts the burden into all medical doctors who may or may not be trained adequately in managing a medico-legal case.⁵ These factors may alarm the need for extra man power and training them to manage medico-legal cases in Emergency Department. Males outnumbered females in our study. Similar findings were documented

from other parts of our country as well as other Asian and European countries.^{2,6-10}

As explained in above mentioned studies, active and outdoor behavior of males making them vulnerable may be true in our context as well. Young people of age group 21 - 30 years commonly presented to emergency with medico-legal diagnosis. Similar findings were reported from few other studies.⁷⁻¹¹

Physical assault and road traffic accidents were the most common medico-legal diagnoses with 33.1% and 32.2% respectively. This was followed by fall injuries and poisoning. This was similar to a study done by Jagtap *et al.*⁹ This finding was comparable with few studies where physical assault, road traffic accidents and poisoning were among top three medico-legal diagnoses.^{3,6,8,11} We didn't observe any cases of firearm injuries but it was common in neighboring countries as revealed by few studies.^{2,12,13} Majority of cases were accidental in nature (47.5%) followed by inflicted by others (33.3%) and self-inflicted (10.2%). This was similar to findings of Mir *et al.*¹³

Most cases (56.1%) were discharged after treatment in the Emergency Department, 13.8% cases were admitted in different specialties for further management, 8.3% cases were referred to other centers for further management and 21.7% cases left against medical advice. In our study, majority of patients were discharged after being managed in the emergency department. This percentage of discharged cases (56.1%) was much lower than the percentage of discharged cases from few studies where it was 87.5% and 81.3%.^{10,13} Nevertheless, a bulk of cases (21.7%) had left against medical advice. This was comparable to 29.3% reported in one study but quite higher than 6.8% reported in another study.^{8,13} The reasons behind large number of cases leaving against medical advice may be either due to the lengthy medical documentation or cumbersome legal formalities, or poor economic conditions, or some unseen reasons yet to be revealed.

Average length of stay in Emergency Department was 2.58 hours, minimum time of stay of being 15 minutes and maximum 24 hours. This duration was less than that from another tertiary care hospital from Nepal where the median length of stay was 3.84 hours while was 4.5 hours in another study.^{14,15} Contrast to few studies where it was documented that 80% cases and 52% cases had length of stay <4 hrs, in our study it was 89.2%.^{16,17}

Majority of cases were cases of physical assault and road traffic accidents, hence most of these

cases needed surgical consultation (48.6%), out of which 80.0% cases needed neurosurgery consultation because of injuries on head region and orthopedic consultation in 42.7% cases. Most of the cases of physical assaults, road traffic accidents and fall from height required consultation from both surgery and orthopedic department. This finding was consistent to the findings of Timsinha *et al.*⁷ where most common consultations were from surgery (58.8%) and orthopedic (16.7%) department. Prolonged stay of cases in emergency results in emergency overcrowding and ultimately impaired emergency services. In the UK a 4-h rule was introduced to restrict the ED work-up time.¹⁸ With time, if situation demands, similar types of restricting rules may be necessary to be implemented in our country as well, so as not to compromise quality emergency services.

Severe form of violence like assault or homicide was predominant in productive age group. Certain interventions like provision of employment and opportunities to engage in recreational activities as well as addressing the mental health issues would be very helpful in reducing the burden of such cases in society. Improvement of road conditions, proper implementation of traffic rules, road safety education and public awareness are mandatory things to prevent road traffic accidents. Most of the cases are preventable through proper education, awareness and training of safety standards. Proper training of the doctors who are involved in handling medico legal cases will also help efficient management of such cases.

ACKNOWLEDGEMENT

We would like to acknowledge the contribution of Emergency Department team for their help and support.

Conflict of interest: None

Source of research fund: None

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