

# MEDICO-LEGAL CASES REGISTERED IN THE CASUALTY DEPARTMENT OF A TEACHING HOSPITAL IN NEPAL

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## ABSTRACT

Medico-Legal Case (MLC) refers to any case of injury or ailment where some criminality is involved. The injury cases suggestive of criminal offense, burn injuries, vehicular accidents, suspected homicide, poisoning, and sexual assault are medico-legal cases. We conducted a descriptive study in Casualty Department of Teaching Hospital, Kathmandu, Nepal from May 1, 2019 to October 31, 2020. A total of 487 cases were registered. The cases were categorized according to the type of treatment they required. The record was obtained after informed consent of participants and with due assurance of confidentiality, ethical regulations and repute of the institution and individual. The data obtained was analyzed in SPSS version 21. Out of the total, 317 were male and 170 were female. The highest recorded cases were due to road traffic accidents (RTA) accounting for 167 (34.3%). The second highest was physical assault comprising 146 cases (30%) followed by fall injury 81 cases (16.6%). The study showed 48 poisoning cases (9.6%), followed by 14 cases (2.9%) of electric shock. Alcohol intoxication and trauma were eight (1.6%) each. Similarly, suicide and blast cases were six (1.2%) each. Likewise, occupational hazard and sexual assault were found one (0.2%) each, during this study period. The most common age group for medico-legal cases was 21-30 years and above 60 years were the least common. RTAs account the major part of Medico-legal cases in our study. By imparting proper education and awareness among public and medical students the frequency of these cases can be reduced.

## KEYWORDS

Medico-legal case, road traffic accident, occupational hazard

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## INTRODUCTION

Medico-Legal Case (MLC) refers to any case of injury or ailment where some criminality is involved,<sup>1</sup> and includes cases where a person is injured or harmed and needs medical responsiveness for it. The injury cases suggestive of criminal and classified as medico-legal cases include blunt and sharp edged weapons injuries, burn cases, vehicular accidents, suspected homicide, firearm injuries, poisoning, and sexual assault.<sup>2</sup>

In developing nations, injuries represent an epidemic that kills more than five million people annually.<sup>1,2</sup> According to the global burden of disease and risk factors study, injuries accounted for more than 15% of all global ill-health in 1990, and it was predicted that this percentage will rise to 20% by 2020. More recent calculations have documented this alarming trend.<sup>3,4</sup> more than 90% of injury deaths occur in low- and middle-income countries, where precautionary efforts are often nonexistent, and health-care systems are least equipped to meet the challenge. Injury triggers the cycle of poverty, and the resulting economic and social costs affect people, communities, and societies as a whole. The socioeconomic impact of injury-related disability is magnified in low-income countries, where there are often poorly developed trauma care and rehabilitation systems and little or no social welfare infrastructure.

In a medico-legal case involving an injury or ailment where the attending physician suspects foul play following clinical examination and history, further investigations can be initiated by law enforcement authorities. It is the duty of every licensed medical professional to evaluate each case fairly and, in cases of uncertainty, to contact the police. By doing this, the doctor is shielded from future baseless accusations.<sup>5</sup>

In all emergency cases, whether medical or surgical, Casualty Medical Officer (CMO) is the first person to attend the patient. The CMO's first and prime duty is to give First Aid and save the life of the patient and then to perform medico-legal formalities. Documenting medico-legal cases is an integral aspect for the prevention of future causalities and to study the crime rate in an area.<sup>4</sup> The present study is based on medico-legal cases reported to the Casualty Department of Nepal Medical College and Teaching Hospital (NMCTH) for a period of 18 months, from May 1, 2019 to October 31, 2020. In this study, not only the epidemiological profile of the patient has been included, but other factors such as the involvement of various

departments in medico-legal cases have been included, which can be helpful to medical legal experts and law enforcing agencies such as the police and the judiciary and ultimately in the process of scientific crime detection and proper administration of justice at large in such cases.<sup>6</sup>

## MATERIALS AND METHODS

A hospital based descriptive cross sectional study was conducted on medico-legal cases reported to the Casualty Department of NMCTH during the period of May 1, 2019 to October 31, 2020. The main objective of this research was to study the medico-legal cases registered at the Casualty Department of Teaching Hospital, Kathmandu, Nepal and to see the pattern of injuries.

Medico-legal case is one where besides the medical treatment; investigations by law enforcing agencies are essential to fix the responsibility regarding the present state / condition of the patient. The case therefore has both medical and legal implications. It is mandatory to register medico-legal cases.

The total number of cases visiting the Casualty department were 487 with 317 males and 170 females. If the patient was registered as police case/ medico legal case, then consent was taken for their participation in the study. The history was taken and clinical examination was performed. The record obtained after informed consent of participants and with due assurance of confidentiality, ethical regulations and repute of the institution and individual. The obtained data was analyzed in SPSS 17 using chi-square and taking care of preserving material of evidence of medico-legal cases for purpose of law as per guidelines from the regulatory authorities.<sup>7</sup>

## RESULTS

The most affected age group was 21 to 30 years with frequency of 163 (33.5%). The second most affected age group was 10 to 20 years with a frequency of 97 (19.9%). The third and fourth common age groups were 31 to 40 and 0 to 10 years with frequencies of 89 (18.3%) and 54 (11.1%), respectively. Similarly, the age group 51 to 60 had the least frequency of 17 (3.5 %) (Table 1).

Table 2, shows a total of 487 medico-legal cases were registered in Casualty Department of NMCTH. The highest numbers of medico-legal cases recorded were 167 cases (34.3%) of road traffic accident (RTA). The second highest was

**Table 1: Age classification**

Variable	Category	n	%
Sex	Male	317	65.09
	Female	170	34.91
	<b>Total</b>	<b>487</b>	<b>100</b>
Age in years	< 10	50	10.27
	10 - 19	85	17.45
	20 - 29	158	32.44
	30 - 39	103	21.15
	40 - 49	50	10.27
	50 - 59	22	4.52
	≥ 60	19	3.90
<b>Total</b>	<b>487</b>	<b>100</b>	

physical assault comprising 146 cases (30%) followed by fall injury 81 cases (16.6%). There were 48 poisoning cases (9.6%), followed by 14 cases (2.9%) of electric shock. Alcohol intoxication and trauma were eight (1.6%) each. Similarly, suicide and blast cases were six (1.2%) each. Likewise, occupational hazard and sexual assault were found one (0.2%) each, during this study period.

Table 3, shows the gender-based distribution of cases. According to the study; the most common case involving male was RTA (22.38%) while the least common case for male was sexual assault. Among women, the most common medico-legal case was RTA (12.11%) and the least common was blast injury.

**Table 2: Categories of Medico –Legal Cases**

Categories	Total	%
RTA	167	34.3
Poisoning	48	9.6
Physical assault	146	30
Fall injury	81	16.6
Alcohol intoxication	8	1.6
Suicide	6	1.2
Electric shock	14	2.9
Trauma	8	1.6
Blast	6	1.2
Occupational hazards	1	0.2
Sexual assault	1	0.2

## DISCUSSION

In our study, the maximum number of cases of RTA were recorded due to various kinds of carelessness by pedestrians and drivers or both. Cases of physical assault were primarily due to alcohol intoxication, quarrelling among friends, domestic violence, and other various causes. Poisoning cases that were attended in the Casualty department were mainly by the suicidal intension, few were accidental, and none were homicidal.<sup>8</sup> Fall injury was most common in children playing on the balcony and veranda, most were under 10 years old, which can be due to inattention of the guardians' and some were recorded while climbing trees and few cases were accidentally slipped while climbing. Alcohol intoxication

**Table 3: Distribution of cases based on gender**

Cause	Sex		Total
	Male	Female	
RTA	109 (22.38%)	59 (12.11%)	168 (34.50%)
Poisoning	13 (2.67%)	25 (5.13%)	38 (7.80%)
Physical assault	96 (19.71%)	37 (7.60%)	133 (27.31%)
Fall injury	40 (8.21%)	18 (3.70%)	58 (11.91%)
Alcohol intoxication	8 (1.64%)	1 (0.21%)	9 (1.85%)
Suicide	3 (0.62%)	8 (1.64%)	11 (2.26%)
Electric shock	1 (0.21%)	0 (0%)	1 (0.21%)
Trauma	2 (0.41%)	3 (0.62%)	5 (1.03%)
Blast	1 (0.21%)	0 (0%)	1 (0.21%)
Sexual assault	0 (0%)	1 (0.21%)	1 (0.21%)
Others	44 (9.03%)	18 (3.70%)	62 (12.73%)
<b>Total</b>	<b>317 (65.09%)</b>	<b>170 (34.91%)</b>	<b>487 (100%)</b>

**Table 4: Distribution of cases based on age**

Cause	Age in years							Total
	< 10	10 - 19	20 - 29	30 - 39	40 - 49	50 - 59	≥ 60	
RTA	21 (4.31%)	26 (5.34%)	58 (11.91%)	35 (7.19%)	12 (2.46%)	7 (1.44%)	9 (1.85%)	168 (34.50%)
Poisoning	5 (1.03%)	8 (1.64%)	8 (1.64%)	8 (1.64%)	6 (1.23%)	1 (0.21%)	2 (0.41%)	38 (7.80%)
Physical assault	1 (0.21%)	18 (3.70%)	50 (10.27%)	37 (7.60)	16 (3.29%)	6 (1.23%)	5 (1.03%)	133 (27.31%)
Fall injury	14 (2.87%)	12 (2.46%)	14 (2.87%)	6 (1.23%)	7 (1.44%)	3 (0.62%)	2 (0.41%)	58 (11.91%)
Alcohol intoxication	1 (0.21%)	1 (0.21%)	3 (0.62%)	1 (0.21%)	3 (0.62%)	0 (0%)	0 (0%)	9 (1.85%)
Suicide	0 (0%)	3 (0.62%)	5 (1.03%)	3 (0.62%)	0 (0%)	0 (0%)	0 (0%)	11 (2.26%)
Electric shock	0 (0%)	1 (0.21%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.21%)
Trauma	0 (0%)	0 (0%)	3 (0.62%)	2 (0.41%)	0 (0%)	0 (0%)	0 (0%)	5 (1.03%)
Blast	0 (0%)	1 (0.21%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.21%)
Sexual assault	0 (0%)	1 (0.21%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.21%)
Others	8 (1.64%)	14 (2.87%)	17 (3.49%)	11 (2.26%)	6 (1.23%)	5 (1.03%)	1 (0.21%)	62 (12.73%)
<b>Total</b>	50 (10.27%)	85 (17.45%)	158 (32.44%)	103 (21.15%)	50 (10.27%)	22 (4.52%)	19 (3.90%)	487 (100%)

was due to consumption of local brand alcohol as habituation.<sup>9</sup> Electric shock was observed due to accidental touching of naked wires while mending the electricity or touching it with naked hand.<sup>10</sup> Trauma included various injuries sustained by different kinds of weapons and circumstances. There were multiple cuts in the hands and neck with suicidal intension which was mainly due to mental instability, domestic violence, and hit by mobiles as well. Blast cases were also accidental while working on hillsides and roadsides. Occupational hazards were noticed due to prolonged work in industry. Sexual assault was claimed to be intentional.<sup>11</sup>

The most common age group for medico-legal cases was 21 -30 years and above 60 years were the least common. The retrospective review medico-legal cases in emergency case in B. P. Koirala Institute of Health Sciences (BPKIHS), Dharan was conducted from April 2015 to March 2016. The cases were profiled for socio-demography, injury and diagnosis from

the medico-legal register at the emergency ward of BPKIHS. A total of 3,715 cases were included in this study. Half (50.0%) of the cases fell into the category of 25-59 years. Males were almost twice (62.7%) in number, compared to females (37.3%). The top three diagnoses among MLC cases were road traffic accidents (41.81%), physical assault (21.13%) and poisoning (20.08%). Other diagnoses were burns, fall injury, sexual assault, self-inflicted injury, hanging, gunshot injury, stab injury, machinery injury, drug overdose, blast injury, brought dead, trauma by animal, electrical injury, snake bite and human bite. There was a significant number and wide variety of medico-legal cases that presented in the emergency ward of BPKIHS.<sup>12</sup>

The cross-sectional study on 3105 registered cases in medico legal record of the casualty department of Benazir Bhutto hospital, Rawalpindi, from January 2015 to December 2015. 3105 registered medico-legal cases,

reported cases caused by RTA 1230 (40%) followed by blunt injury or physical assault 966 (32%) cases, 19% by sharp weapons, 5% by poisoning, and 4% by firearm injuries. In this study almost three quarter of victims (73%) were below 30 years of age, with a decreasing frequency beyond this age, males were predominantly inflicted 2516 (81%) as compared to females 589 (19%). The reported road traffic accidents cases from urban areas were high (74%) as compared to those from rural locality (37%). In cases of blunt trauma, sharp weapon injuries and firearm injuries, and sharp weapon injuries.<sup>13</sup>

In conclusion, the present study shows an increase in trend in medico-legal cases, the most common age group for medico-legal cases was 21 -30 years and above 60 years were least common. RTAs account for the majority of medico-legal cases in Nepal.<sup>14</sup> Physical assault has become a serious issue in our society due

to the immense amount of free time to think and argue with another person by consuming alcohol or talking about the problems that result in assault and also leading to domestic violence which is common here. Knowing the cause of medico-legal cases countries be serious in reducing the case by making the program and implementing it in urban and rural areas of Nepal.<sup>15</sup> Also, by imparting proper education and awareness among public and medical students the frequency of these cases can be reduced. Strict laws should be enforced to reduce road traffic accidents. Better training should be given to doctors who handle these cases. Our country lacks the knowledge about ethical responsibilities which can be corrected by conducting various training programs during a certain interval of time.<sup>16</sup>

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