

Etiology and Demographic Profile of Medico-legal Cases in Emergency of a University Hospital in Nepal

Pratima Khatri¹, Anita Munikar², Pooja Pandit², Lalita Rai², Ramesh K Maharjan³, Mohan R Sharma⁴

Author(s) affiliation

¹Manmohan Cardiothoracic Vascular and Transplant Centre, Maharajgunj, Kathmandu, Nepal

²Maharajgunj Nursing Campus, Institute of Medicine, Tribhuvan University, Maharajgunj, Kathmandu, Nepal

³Department of Emergency Medicine, Maharajgunj Medical Campus, Tribhuvan University Teaching Hospital, Institute of Medicine, Maharajgunj, Kathmandu, Nepal

⁴Department of Neurosurgery, Maharajgunj Medical Campus, Tribhuvan University Teaching Hospital, Institute of Medicine, Maharajgunj, Kathmandu, Nepal

Corresponding author

Pratima Khatri, BNS, MN
pratima.khatri@mcvtc.tu.edu.np

Submitted

Feb 22, 2022

Accepted

Mar 29, 2022

ABSTRACT

Introduction

Any injury or ailment where investigations by the law-enforcing agencies are crucial are considered as medico-legal cases. The objective of this study was to describe the profile of medico-legal cases presenting to the Emergency Room (ER) of Tribhuvan University Teaching Hospital (TUTH), Kathmandu, Nepal.

Methods

A retrospective review of medical records was done to include all medico-legal cases presented from July 2018 to June 2019.

Results

Medico-legal cases comprised 1805 (3.8%) of all cases (47,289) in the study period. The category of 25- 39 years was the commonest age group involved [659 (36.5%)] followed by 15-24 years group [582 (32.2%)]. Males were almost twice (65.8%) in number compared to females (34.2%). The top three reasons for the ER visit were road traffic accidents (RTAs) [757(41.94%)], physical assaults [356 (19.72%)] and poisoning [239 (13.24%)]. Other causes were burns, falls, sexual assaults, hanging, injuries (gunshot, electrical and machinery) and drug overdose.

Conclusion

There are significant numbers and wide varieties of medico-legal cases that present in the ER of TUTH. Young males are the most high-risk population and RTAs are the commonest etiology. This study will help the hospital in capacity strengthening of the ER, based on the volume of individual case types.

Keywords

Emergency room, medico-legal cases, road traffic accidents, university hospital

INTRODUCTION

Medico-legal cases are considered as any injury or disease, in which investigations by the legal agencies in a systematic manner, fix the responsibility regarding the causation of the injury or disease.¹ In a busy university hospital, medico-legal cases comprise a significant proportion of patients seen in the emergency room (ER).^{2,3} Prompt evaluation and management of such cases will help reduce the mortality and disability of patients; at the same time preventing healthcare workers from medical liability.^{1,4} There have been several publications on this topic from other countries including south Asian countries. However, very few studies were reported in this area from Nepal. There are two descriptive studies published in 2015 (one from the eastern and one from the western part of the country) where the authors described the profile of medicolegal cases such as road traffic accidents among young adults as the leading reason to visit the emergency unit of the hospital.^{4,5} There is a lack of data from the central part of Nepal.

The primary objective of this study was to describe the demographic profile and Etiology of medico-legal cases presented to the ER of Tribhuvan University Teaching Hospital (TUTH), Kathmandu, Nepal. The secondary objectives were to describe the triaging status in the ER, and the disposition of such patients from the ER.

METHODS

A retrospective descriptive chart review was done, including all medico-legal cases presented to the ER of TUTH from July 2018 to June 2019. Out of 47,289 cases, 1,805 were medicolegal in nature. Cases with incomplete recordings or unclear data were excluded. Variables analyzed included socio-demographic profile (age, sex, marital status, and place of origin), etiology and diagnosis, triaging, and disposition from the ER. Ethical approval was obtained from the institutional review committee of

the institute of medicine, Maharajgunj prior to data abstraction. Data was summarized and analysed using the Statistical Package for the Social Sciences (SPSS) version 17 (SPSS Inc, Chicago, Illinois, 2008). Confidentiality was maintained throughout the data abstraction and reporting.

RESULTS

The age ranged from 2 to 89 years. The age groups were divided into five categories. As shown in Table 1, the commonest age group involved was 25 to 39 years, which comprised 659 (36.5%) cases. Males were almost twice in number compared to females [1190 (65.8%) vs 615 (34.2%)].

The majority [1100 (60.9%)] of patients were from urban settings whereas 705 (39.1%) came from rural areas. Regarding the marital status, 928 (51.4%) were unmarried, 723 (40.1%) married, 145 (8%) widow/widower and 9 (0.5%) divorced.

As shown in Table 2, the top five reasons for ER visits were road traffic accidents (RTAs) [757(41.9%)], physical assaults [356 (19.7%)], poisoning [239 (13.2%)], falls [158 (8.8%)], and burns [76 (4.2%)]. other causes were sexual assaults, hanging, injuries (gunshot, electrical, and machinery) and drug overdose.

The data of triage displayed that the maximum number of cases attending ER were categorised in green area [951 (52.7%)]. Likewise, the numbers in red, yellow and black area were 513 (28.4%), 52 (2.9%) and 5 (0.3%) respectively. Triage

Table 1. Socio-demographic profile of the medico-legal cases (n=1805)

Age group (years)	Number (%)
0-14	146 (8.1%)
15-24	582 (32.2%)
25-39	659 (36.5%)
40-59	280 (15.5%)
≥60	138 (7.6%)

Table 2. Top five medico-legal cases with age and sex distribution

Characteristics	RTAs	Physical Assault	Poisoning	Falls	Burns
Age group					
0-14	81	15	5	29	3
15-24	240	121	92	40	17
25-39	257	153	97	45	33
40-59	123	53	34	30	9
≥60	56	14	11	14	14
Sex					
Male	520	244	113	118	40
Female	237	112	126	40	36

categorization was missing in 284 (15.7%) cases.

The maximum number of cases were discharged directly from ER [804 (44.6%)], followed by "Discharged on Patient's Request" [565 (31.3%)], admitted [237 (13.2%)], absconded [181 (10.1%)], and death [18 (1.0%)]. The details of admission in various department are shown in Table 3.

DISCUSSION

Our study is a case series analyzing the medicolegal cases from a University Hospital in the central part of Nepal. This study highlights the recent trend of medicolegal cases in a metropolitan city in Nepal.

In this study, the commonest age group afflicted was 25-39 years (36.5%), followed by 15-24 years (32.2%). A significant proportion (7.6%) of the cases included those above 60 years suggesting that the problem is not uncommon in old adults. There was a strong male predilection. This finding is supported by similar studies conducted in eastern and western parts of Nepal and from India and Turkey.⁴⁻⁷

The large proportion of males in this patient population is explained by several factors. First, in the context of Nepal, male member of the society are often the breadwinner of the family and hence are exposed to more outdoor activities. Second, males are often considered to have more risk-taking behaviour than females, making them more prone to RTAs.^{2,8} However, there could be more confounding variables that we have not analysed in this study.

In the present study, RTAs were the commonest reason for ER visit followed by physical assault and poisoning. It is to be noted that though males predominate in RTAs, physical assault, and falls, poisoning was more common in female (126 versus 113). Though why females are more prone to poisoning is difficult to say with certainty, there are reports suggesting the fact that women tend to engage themselves in impulsive acts of self-harm.^{9,10} This report is consistent with a previously published study in 2009 regarding poisoning in the adjoining district of Kathmandu.¹⁰ As regards to burns, males outnumber females slightly (40 versus 46). This corroborates with studies conducted in Nepal, India and Pakistan.^{2-5,8} This probably suggests that the population profile of this study is similar to both studies published from Nepal and those from the south Asian region.

In the present study, the majority of the patients were in green area which suggests that the condition of the patient was not life threatening at presentation. The explanation for this is probably due to the fact that as the traffic is very heavy in Kathmandu, RTAs (the commonest etiology of medicolegal cases) often occur with the vehicles

Table 3. Admission of the patients to departments from emergency (n=237)

Areas	Number (%)
Orthopedics Department	58 (24.5%)
General Surgical Department	48 (20.2%)
Plastic Surgery Department	29 (12.2%)
Ophthalmology Department	23 (9.7%)
Critical Care Department	22 (9.3%)
Neuro-surgery Department	15 (6.3%)
ENT Department	13 (5.5%)
Obstetrics Department	13 (5.5%)
Pediatrics Department	9 (3.8%)
Medical Department	7 (3.0%)

in low speed. Hence the injury is not severe. In their study by Abebe and colleagues in Ethiopia in 2017, out of 662 RTA victims, 289 (43.7%) patients were assigned as Green and 273 (41.2%) patients assigned as Yellow.¹¹ In our series, patients in Yellow area comprised only 2.9% of cases which is in sharp contrast to their results.

The largest number of patients were discharged from the ER suggesting that the condition was not serious to begin with. Out of 237 patients admitted 37 (19.8%) underwent operation and 22 (9.3%) were admitted to Intensive Care Unit (ICU). This finding is in sharp contrast to the report by Fernando and colleagues in 2018 where they reported a large number of operations and ICU admissions directly from ER.¹² This is probably explained by the different patient populations with their study was done in Ontario.

Our study findings will be of great interest to policy makers at the institutional, provincial and federal levels. Our study provides the baseline data on medicolegal cases from the central part of Nepal from a major university hospital in Kathmandu. Our study recommends that more health promotion and injury prevention strategies should be directed toward young males.

CONCLUSION

There are significant numbers and wide varieties of medico-legal cases that present in the ER of TUTH. Young males are the high-risk population and RTAs are the commonest etiology in medicolegal cases both of which demand attention from the policy makers and health care professionals. This study will stimulate future prospective multicentric research in this often neglected area so that the true picture of the problem from Nepal is revealed.

FINANCIAL SUPPORT

The author(s) did not receive any financial support for the research and/or publication of this article.

CONFLICT OF INTEREST

We do not have any conflict of interest regarding the content of this article.

ACKNOWLEDGEMENT

We would like to acknowledge the contribution of Anisha Shrestha, Bishnu Pandey, Lila Devi Karki, Meena Chand, Smrittee Bhattraai, and the entire team of ER during data collection.

REFERENCES

1. Dogra TD, Rudra A. Lyon's Medical Jurisprudence and Toxicology, 2007. Delhi Law House, Delhi.188-93.
2. Korah MK, Guria J, Mahato T, et al. Profile of medico-legal cases at Rajendra Institute of Medical Sciences, Ranchi, Jharkhand from 2014-2015. JDMS 2016; 15(11): 12-14.
3. Malik Y, ChawlaR, Sharma G, et al. Profile of medico legal cases in causality of a rural medical college of Hariyana. JIAFM 2013; 35(4): 367-368
4. Timsinha S, Baral MP, Kar SM, et al. Profile of pattern of medico-legal cases in the casualty of a teaching hospital of western region of Nepal. JIAFM 2015; 37.
5. Malla GB, Aryal BD, Chaudhary S, et al. Profile of medico-legal cases coming to emergency ward of B.P Koirala Institute of Health Sciences. JBPKIHS 2015; 1(2):50-56
6. Aktas N, Gulacti U, Lok U, et al. Characteristics of the traumatic forensic cases admitted to emergency department and errors in the forensic report writing. BET 2018; 6(1): 64–70.
7. Karki N, Singh V, Verma VK. Pattern, management, and outcome of poisoning in a tertiary care hospital. JLMC 2018; 6(1):32-35.
8. World Health Organization. Road traffic injuries [Internet]. [Cited 2021 Nov 27]. Available from: <https://www.who.int/news-room/fact-sheets/detail/road-traffic-injuries>
9. Thapa S, Dawadi BR, Upreti AR. Acute poisoning among patients presenting to the emergency department of a tertiary care center: a descriptive cross-sectional study. JNMA 2020 ; 58 (227):470–3.
10. Marahatta SB, Singh J, Shrestha R, et al. Poisoning cases attending an emergency department in Dhulikhel Hospital- Kathmandu University Teaching Hospital. KUMJ. 2009;7(26):152–6
11. Abebe Y, Dera T, Silvestri D, et al. Analyzing the emergency triage logbook components of road traffic accident victims at AaBET hospital in Addis Ababa, Ethiopia. AGH. 2017 (28); 83:71.
12. Fernando SM, Rochweg B, Reardon PM, et al. Emergency Department disposition decisions and associated mortality and costs in ICU patients with suspected infection. Crit Care. 2018; 22(1):172.