"A Study Pattern of Medico-legal Cases Treated at a Tertiary Care Hospital in Central Karnataka"

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ABSTRACT

Background: *With a sudden rise in population throughout the globe there is a surge in the medico-legal cases as well. These medico-legal cases differ among regions based on socio-economic status, cultural diversities, capability of law enforcing agencies and the prevailing standards of health care services available in the community.*

Aims and Objectives: *To know the pattern and profile of medico-legal cases in a tertiary care hospital.*

Materials and Methods: *This is a prospective study in which 4066 medico-legal cases were studied. This cases attended in Casualty department, J.J.M. Medical College and Bapuji Hospital from 1st October 2014 to 30th September 2015 and the information was collected with respect to their demographic profile, age and sex wise distribution, time period between injury and reporting to casualty, time of occurrence, type of injury, manner of injury, prognosis and the mortality profile.*

Results: *Out of 4066 cases studied, 2918 (71.76%) were males and 1148 (28.23%) were females. Majority of the victims belonged to an age group ranging 21 – 30 years of age (37.67%). The urban victims constituted 2134 (52.48%) compared to the rural counterparts, 1932 (47.51%). Road traffic accidents constituted a majority of cases (47.73%), poisoning and fall constituted 16.84% each followed by assault in 6.19% of cases. Majority of the victims (51.94%) reported to the casualty within 1 hour of incident. 78.99% of the victims were discharged from the hospital after treatment. The peak time of attending to the casualty was during 12 pm to 6 pm and the manner of injuries were accidental in nature in majority of the cases (69.03%).*

Conclusion: *This study shows the frequency of medico-legal workload in a tertiary care hospital, public attention and awareness towards medico-legal emergencies, urges round the clock availability of medico-legal experts to deal effectively with the legal responsibilities, sensitize the doctors to handle those cases including proper documentation and certification of medico-legal cases and also provides a valuable information for government, health care policy makers, law enforcing agencies to take effective measures.*

Keywords: *Medico-legal cases, Road traffic accidents, Poisoning, Fall, Assault.*

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INTRODUCTION

A medico-legal case is a case of injury or ailment where attending doctor after taking history and clinical examination of the patient thinks that some investigations by law enforcing agencies are essential so as to fix responsibility regarding the case. It is a responsibility of a registered medical practitioner to judge each and every cases properly and in doubtful cases, it is better to inform the police. This saves the doctor from unnecessary and needless allegations later.[1]

Casualty department is the backbone of every hospital. It deals not only with medical and surgical emergencies round the clock but also deals with a huge number of medico-legal cases which comprises accidents, assaults, burns, poisoning, sudden deaths, operative deaths, suicide, homicide, any suspicious deaths and cases referred from police or court.[2]

The present study attempts to highlight the pattern and profile of medico-legal cases presenting in casualty department which not only highlights the value system among individuals in the community but also provides vital data for administrators, health officials, philanthropists, social workers, NGOs to devise strategies in order to reduce these incidences.

MATERIALS AND METHODS

A prospective study for a period of one year from 1st October 2014 to 30th September 2015 was conducted in which 4066 medico-legal cases attending Casualty department of J.J.M. Medical College and Bapuji Hospital, Davangere, Karnataka were studied. Individuals from both genders and all age groups were included and those with no medico-legal perspective were excluded from study. A pre structured proforma was used to note down types of injuries and additional information like the demographic profile, age, mode of injury, time of occurrence, time period between injury and reporting to casualty was collected from victim's attendants and police.

RESULTS

Out of 4066 cases studied, 2918 (71.76%) were males and 1148 (28.23%) were females. (Chart 1)

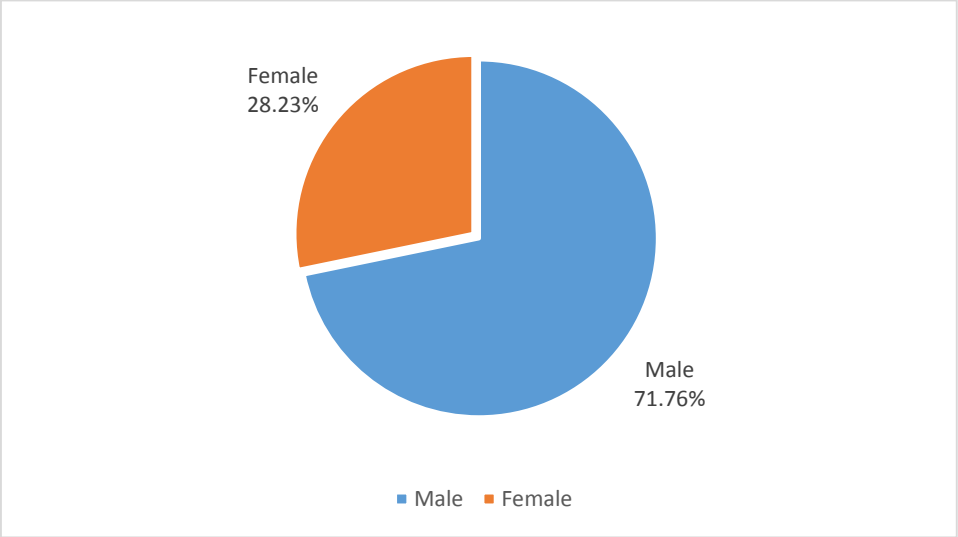


Chart 1: Gender wise distribution of cases

Table 1 shows that majority of victims (37.67%) from age group 21 – 30 years followed by 31 – 40 years (22.70%) and 11 – 20 years (15.05%).

Table 1: Age wise distribution of victims

Age groups	No. of cases	Percentage
0-10	95	2.34%
11-20	612	15.05%
21-30	1532	37.67%
31-40	923	22.70%
41-50	523	12.86%
51-60	192	4.72%
61 & above	189	4.64%

The urban victims constituted 2134 (52.48%) and the rural victims were 1932 (47.51%). (Chart 2)

Chart 2: Distribution of cases according to demography

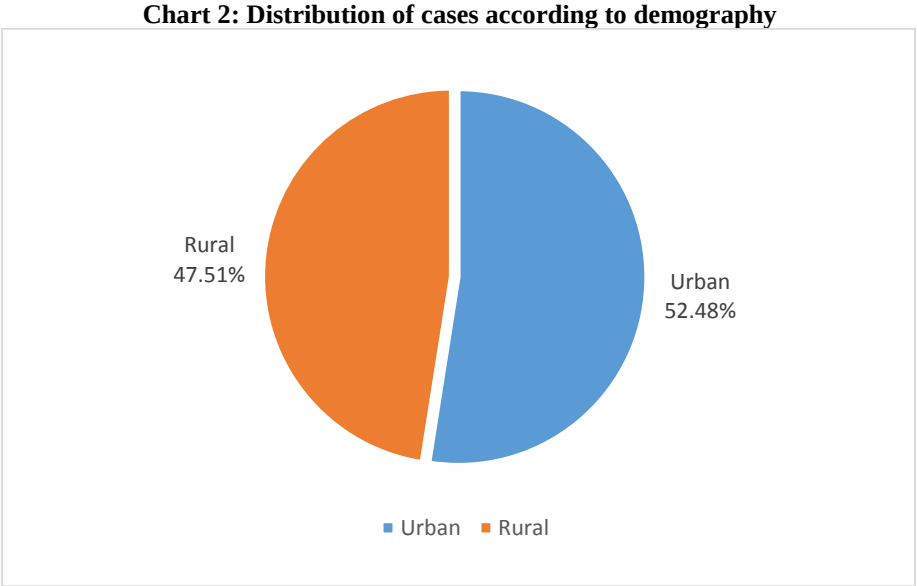


Table 2 shows road traffic accidents constituted 47.73%, poisoning and fall constituted 16.84% each followed by assault in 6.19% of cases.

Table 2: Pattern of medico-legal cases with sex wise distribution

Medico-legal cases	Male	Female	Total
Poisoning	412 (10.13%)	273 (6.71%)	685 (16.84%)
Trauma	176 (4.32%)	40 (0.98%)	216 (05.30%)
Assault	193 (4.75%)	59 (01.45%)	216 (06.20%)
Road traffic accident	1526 (37.53%)	415 (10.20%)	1941 (47.73%)
Snake bite	62 (01.52%)	54 (01.33%)	116 (02.85%)
Hanging	17 (0.42%)	8 (0.19%)	25 (0.61%)
Burns	10 (0.24%)	19 (0.46%)	29 (0.70%)
Scorpion sting	8 (0.19%)	10 (0.24%)	18 (0.43%)
Insect bite	66 (1.62%)	27 (0.66%)	93 (02.28%)
Fall	445 (10.94%)	240 (05.90%)	685 (16.84%)
Dog bite	02 (0.05%)	00 (0.0%)	02 (0.05%)
Drowning	01 (0.02%)	03 (0.07%)	04 (0.09%)
Total	**2918 (71.76%)**	**1148 (28.23%)**	**4066 (100%)**

Chart 3 shows time period between incidence and reporting to the casualty, majority of the victims (51.94%) reported within 1 hour of the incidence followed by 20.12% of the victims attended with 1 – 2 hours of the incidence to the casualty.

Chart 3: Time period between incidence and reporting to casualty

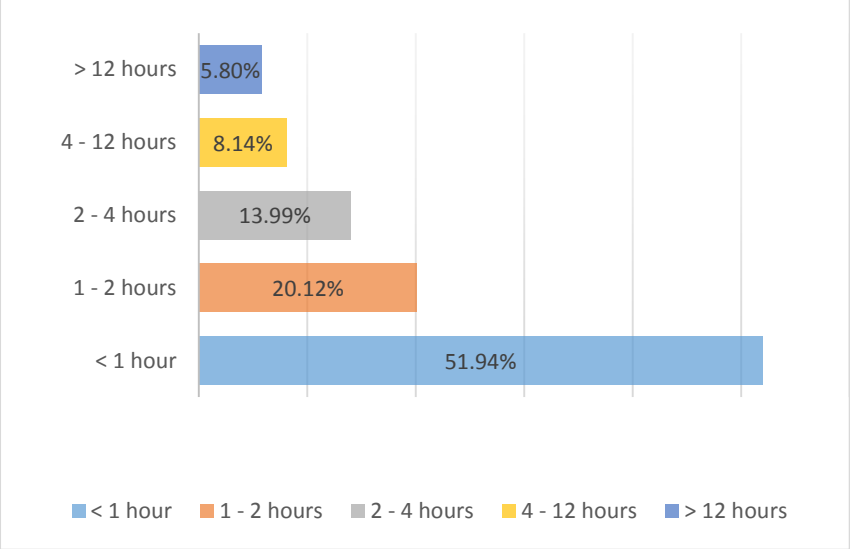


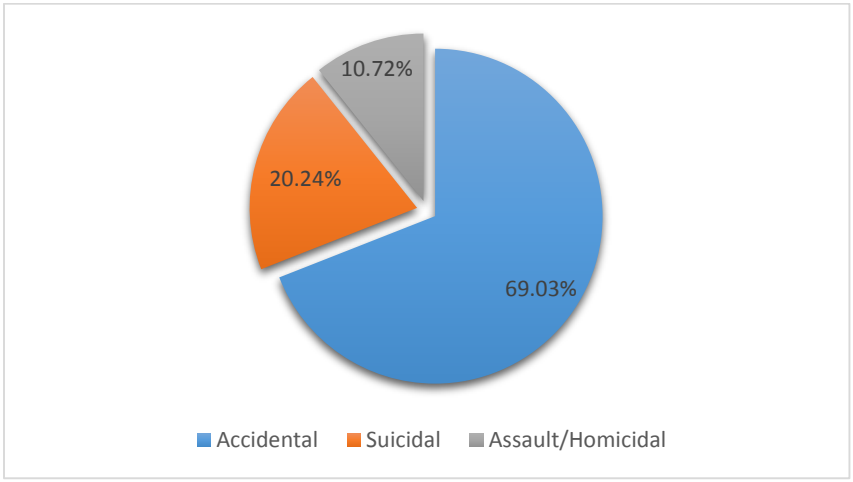
Table 3 shows the time of attending to the casualty, maximum number of victims attended to the casualty between 12 p.m. to 6 p.m. (38.90%).

Table 3: Distribution of cases according to time of reporting to casualty and sex

Time	Male	Female	Total
12 am to 6 am	312 (07.67%)	230 (05.65%)	542 (13.33%)
6 am to 12 pm	612 (15.05%)	224 (05.51%)	836 (20.56%)
12 pm to 6 pm	1017 (25.01%)	565 (13.89%)	1582 (38.90%)
6 pm to 12 am	977 (24.03%)	129 (03.17%)	1106 (27.20%)
Total	**2918 (71.76%)**	**1148 (28.23%)**	**4066 (100%)**

Present study observes majority of the medico-legal cases accidental (69.03%) in nature followed by suicidal (20.24%) and assault/homicidal in 10.72% of cases. (Chart 4)

Chart 4: Manner of incidences



It was observed that majority of the victims were discharged from hospital after treatment (78.99%) while in 9.42% of the victims had absconded or took LAMA (Leave against medical advice). (Table 4)

Table 4: Distribution according to outcome of the cases at casualty and sex

Disposal of cases	Male	Female	Total
Brought dead	24 (0.59%)	11 (0.27%)	35 (0.86%)
Discharged after treatment	2452 (60.30%)	760 (18.69)	3212 (78.99%)
LAMA	202 (4.96%)	181 (4.45%)	383 (9.41%)
Referred to higher centre	192 (4.72%)	160 ((3.93%)	352 (8.65%)
Hospital death	48 (1.18%)	36 (0.88%)	84 (2.06%)
Total	**2918 (71.76%)**	**1148 (28.23%)**	**4066 (100%)**

DISCUSSION

In our study it was observed that most of the victims were males (71.76%). Our findings are consistent with study conducted by Trangadia MM et al[3] (males 72.77%), Hussaini SN et al[4] (males 74.03%), Yatoo GH et al[5] (males 74.03%). The predominance of males over females may be attributed to the male dominance in the society and males who work outside to earn their daily bread are more vulnerable, while females usually stay at home and look after the house hold work.

In present study majority of victims (37.67%) from age group 21 – 30 years followed by 31 – 40 years (22.70%) and 11 – 20 years (15.05%). Similar results were also obtained by Trangadia MM et al[3], Hussaini SN et al[4], Yadav A et al[6]. Result shows that the people of the most active and productive age group involve themselves in outdoor activities so they are more prone to accidents.

It was observed that urban victims constituted 2134 (52.48%) and the rural victims were 1932 (47.51%). Similar findings were also observed by Hussaini SN et al[4]. The studies which were conducted in the rural areas differ from the present study. Increasing number of population in the city and increase in the slum areas drastically within the last few years, lack of good roads and less safety measures among people, more number of falls due to industrial mishaps, construction works and fall from buildings constitute more number of medico-legal cases in urban areas in and around Davangere.

In the present study road traffic accidents constituted 47.73%, poisoning and fall constituted 16.84% each followed by assault in 6.19% of cases. The findings of our study are consistent with the studies conducted by Trangadia MM et al[3], Yatoo GH et al[5] where road traffic accidents constituted majority of medico-legal cases. Poor road condition prevailing for a decade in both urban and rural areas, increasing population in the city day by day contributes maximum number of road traffic accidents. Recently prevailing drought and also easy access of insecticides among the farmers contributes more number of poisoning cases as Davangere is one of the greatest agricultural hub in Karnataka.

Maximum incidence of medico-legal cases took place between 12 p.m. to 6 p.m. (38.90%) because in this time of day people engage themselves maximally into their activities. This is consistent with study conducted by Trangadia MM et al[3], Yatoo GH et al[5]. Minimum incidences of medico-legal cases seen in between 12 a.m. to 6 a.m. because people usually remain asleep.

In our study it was observed that majority of the victims (51.94%) reported within 1 hour of the incidence followed by 20.12% of the victims attended with 1 – 2 hours of the incidence to the casualty. Our study results are consistent with study conducted by

Yadav A et al[6]. It can be explained by urban peoples are taking benefit of having tertiary care hospital in their close vicinity and also increase health awareness.

In the present study majority of the medico-legal cases were accidental (69.03%) in nature followed by suicidal (20.24%) and assault/homicidal in 10.72% of cases. Our study results are not consistent with study conducted by Yadav A[6], where assault cases (39.6%) are almost equal to accidental manner (38.1%) of medico-legal cases. In present study road traffic accidents and fall constitutes maximum accidental manner of medico-legal cases and there after poisoning cases contributes suicidal manner of medico-legal cases. India has witnessed rapid urbanization, motorization, industrialization and migration of people in last two decades, the reflection can be observed in a central Karnataka city like Davangere also. Davangere is an agricultural hub of Karnataka, hence major population depend upon farming activity, spraying of insecticides, so easy access of those insecticides contributes to suicidal poisoning.

Majority of the victims were discharged from hospital after treatment (78.99%) while in 9.42% of the victims had absconded or took LAMA (Leave against medical advice), 8.65% of cases were referred to higher centre and death was noted in 2.06% of cases which were subjected for medico-legal autopsy. Our observations are consistent with study conducted by Trangadia MM et al[3], Yadav A et al[6]. This shows the awareness and health consciousness among the population, effectiveness of early initiation of treatment in emergency cases and also sophisticated facilities to deal with medical emergencies.

CONCLUSION

This study not only shows the load of medico-legal cases in a tertiary care hospital but also shows the need of public awareness to take medical attention for a comfortable outcome, seeks the importance of medico-legal responsibilities like examination, proper documentation and certification of medico-legal cases. In the present study maximum number of patients were discharged successfully after treatment and on the other hand referral to higher centres and the number of hospital deaths were very minimum. Engaging medico-legal expert in a casualty or giving training to the medical officers to carry out medico-legal works safely and scientifically can definitely decrease the issues of negligence cases in a developing country like India. The present study showed that the maximum number of medico-legal cases are accidental in nature, seen among young individuals and in urban inhabitants. Such incidences can be prevented by giving proper education, awareness and training of safety standards by administrators, health officials, social workers and NGOs to the general population.

CONFLICT OF INTEREST:

There is no conflict of interest in our study as we have not gained any financial benefits from any organization.

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