

An Evaluation of Profile of Medico-Legal Autopsy Cases Reported at Department of Forensic Medicine & Toxicology in A Government Medical College of Garhwal Region, Uttarakhand: A Retrospective Study

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Abstract

Background: The profile of medico-legal autopsy cases is crucial to determining the mortality rates in a specific location owing to new causes and also aids in addressing the demographic demands in accordance with those rates.

Materials and Methods: The present study is a retrospective study of autopsies performed at Department of Forensic Medicine & Toxicology, VCSGGIMS & R, Srikot, Srinagar, Pauri Garhwal, Uttarakhand, from 1st January 2020 to 31st December 2021. During this period a total of 156 autopsy cases were conducted. Relevant information and subjective data like age, sex, marital status & manner of death have been collected from medico legal autopsy register.

Results: Out of 156 cases analysed, maximum number of autopsies were in the age group of 21-30 years with 41 cases (26.28%) and majority of were males 119(76.2%). Accidents accounted (58.3%), suicide (24.3%) and sudden death (17.3%) cases. Maximum number of deaths were due to road traffic accidents with 82 cases (52.5%) followed by natural death with 27 cases (17.3%).

Conclusion: In our study we found that majority of cases were in 3rd and 4th decade of life, majority cases were males as compared to females, and Hindus being majority in number formed bulk of cases.

Keywords: Drowning, Medico-legal Autopsy, Natural death, Road traffic accidents.

Introduction

Unnatural fatalities in India made up 10.3% of all deaths, and they were more common among people between the ages of 10 and 45. India had a 0.67 unnatural mortality rate per 1000 people, with 0.84 unnatural deaths per 1000 men and 0.49 unnatural deaths per 1000 women.¹

When a death is sudden, mysterious, unnatural, contentious, or illegal, a medical-legal autopsy is conducted on the request of the legal authorities, and the information obtained is used for legal purposes to aid the administration of justice.²

The goal of a medico-legal post-mortem examination is to determine the cause of death,

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whether it was suicidal or accidental or homicidal, and the time since the death. It also aims to determine the identity of the deceased, when identity is not known. The profile of medico-legal autopsy cases is crucial to determining the mortality rates in a specific location owing to new causes and also aids in addressing the demographic demands in accordance with those rates.³

The results of this study will raise public awareness and assist law enforcement organisations in developing efforts to reduce similar incidents.

Aims and Objectives

The study will be conducted to

1. To assess the profile of medico-legal autopsies.
2. To find preventable measures to reduce the incidences.

Methods/ Methodology

- **Study design:** Retrospective, record-based study.
- **Study population:** It is a record-based study including post-mortem reports of all dead bodies brought to department of Forensic Medicine & Toxicology in VCSGGIMS & R, Srinagar, Pauri Garhwal, Uttarakhand.
- **Place of Study:** Department of Forensic Medicine & Toxicology, VCSGGIMS & R, Srinagar, Pauri Garhwal, Uttarakhand.
- **Sampling Technique:** Continuous Sampling method.
- **Period of study:** 1st January 2020 to 31st December 2021
- **Inclusion criteria:** Post-mortem reports of all dead bodies brought for medico legal post-mortem examination to department of Forensic Medicine & Toxicology in VCSGGIMS & R Srinagar, Pauri Garhwal, Uttarakhand.
- **Method of Collection of Data:** Data was collected and processed at Department of Forensic Medicine and Toxicology. The data is collected as per the predesigned proforma from post-mortem register /record and post-mortem reports, maintaining at most

confidentiality. Data like age, sex, religion, marital status, causes of death & manner of death is compile and analysed. Causes of death will grossly classified as road traffic accident, thermal injuries, natural causes etc.

- **Statistical Analysis:** The data analysed by using SPSS Statistics for Windows software package (Version 1.0.0.1406, IBM® SPSS® Statistics 21).
- **Statistical tests:** Descriptive statistics with percentile strengths is calculated.

Results

A total of 156 medico legal autopsies were conducted during the study period from 1st January 2020 to 31st December 2021. Out of the total 156 cases the maximum incidence 26.2% was reported from 21 to 30 years aged group and minimum incidence 1.9% from 71 to 80years aged group. (Table-1)

Maximum incidence 76.2% was reported from male population and incidence of 23.7% from female population. (Table-2)

Out of the total 156 cases the maximum incidence 92.3% was reported from Hindus population and incidence 4.4% from Muslim population and 3.2 cases reported from other religion population. (Table-3)

Out of the total 156 cases the maximum incidence 66.6% was reported from married population and incidence of 33.3% from unmarried population. (Table-4)

Out of the total 156 cases the maximum incidence 58.3% was reported from rural area and incidence of 41.6% from Urban. (Table-5)

Out of the total 156 cases the maximum incidence 58.3% was reported from Accidents group followed by suicide 24.3 5 and minimum incidence 17.3% was reported from Natural death group.(Table-6)

Out of the total 156 cases the maximum incidence 52.5% was reported by RTA group followed by disease like cardiac pathology liver cirrhosis, oesophageal varices etc... 17.3% and drowning 13.4%, hanging 7.6%, fall from height 5.7%, poisoning 1.9% and minimum incidence 1.2% were reported from burns group. (Table-7)

Table 1: Distribution of cases based on age

| Age | No. of cases | Percentage (%) |
|-------|--------------|----------------|
| 0-10 | 5 | 3.2 |
| 11-20 | 11 | 7 |
| 21-30 | 41 | 26.28 |
| 31-40 | 30 | 19.2 |
| 41-50 | 29 | 18.5 |
| 51-60 | 22 | 14 |
| 61-70 | 10 | 6.4 |
| 71-80 | 3 | 1.9 |
| 81-90 | 5 | 3.2 |
| Total | 156 | 100 |

Table 2: Distribution of cases based on gender

| Gender | No. of cases | Percentage (%) |
|--------|--------------|----------------|
| Male | 119 | 76.2 |
| Female | 37 | 23.7 |
| Total | 156 | 100 |

Table 3: Distribution of cases based on Religion

| Religion | No. of cases | Percentage (%) |
|----------|--------------|----------------|
| Hindu | 144 | 92.3 |
| Muslim | 7 | 4.4 |
| Other | 5 | 3.2 |

Table 4: Distribution of cases based on marital status

| Marital status | No. of cases | Percentage (%) |
|----------------|--------------|----------------|
| Married | 104 | 66.6 |
| Unmarried | 52 | 33.3 |

Table 5: Distribution of cases based on Place of incidence

| Place of incidence | No. of cases | Percentage (%) |
|--------------------|--------------|----------------|
| Rural | 91 | 58.3 |
| Urban | 65 | 41.6 |

Table 6: Distribution of cases based on manner of death

| Manner of death | No. of cases | Percentage (%) |
|-----------------|--------------|----------------|
| Accidents | 91 | 58.3 |
| Suicide | 38 | 24.3 |
| Sudden death | 27 | 17.3 |

Table 7: Distribution of cases based on cause of death

| Cause | No. of cases | Percentage (%) |
|------------------|--------------|----------------|
| RTA | 82 | 52.5 |
| Natural death | 27 | 17.3 |
| Drowning | 21 | 13.4 |
| Hanging | 12 | 7.6 |
| Fall from height | 9 | 5.7 |
| Poisoning | 5 | 3.2 |
| Burns | 3 | 1.9 |

Discussion

- During the study period a total of 156 medico legal autopsies were performed at Department of Forensic Medicine & Toxicology, VCSGIMS & R, Srinagar, Pauri Garhwal, Uttarakhand, during the period of 1st January 2020 to 31st December 2021. In our study, maximum number of autopsy cases were in the age group of 21-30 years i.e., 41 (26.28%), followed by in 31-40 years i.e., 30 cases (19.01%). These findings are in consistency with findings of Kumar Pramod R et al², Junaidi, Khaja et al⁴ and Anand et al⁶ and Manish K et al⁷, Shrivastava P et al⁸, Kartikeyan et al⁹, Agrawal R et al¹⁰.
- The present study majority of victims were male 119 (76.2%) as compared to female 37 (23.7%). Similar findings were seen in studies done of Kumar Pramod R et al² Junaidi, Khaja et al⁴, and Anand et al⁶ and Manish K et al⁷ Shrivastava P et al⁸, Kartikeyan et al⁹, Agrawal R et al¹⁰. The reason being that as males are bread earners and females usually doing household work, which makes the males more vulnerable to accidents, violence and stress & also males predisposed for risk taking behaviour.

- In our study 92.3% were Hindus, and 4.4% were Muslims. Similar findings are observed in study by Kumar Pramod R et al².
- Out of the total 156 cases the maximum incidence 66.6% was reported from married population and incidence of 33.3% from unmarried population. Similar findings are observed in study by Manish K et al⁷.
- In our study majority of the cases were from rural background i.e., 91 cases (58.3%). These findings are in consistency with findings of Junaidi, Khaja et al⁴ and Manish K et al⁷, Shrivastava P et al⁸.
- In our study most common manner of death was accidental 91 (58.3%), followed by suicides 38 (24.3%) which was consistent with the study conducted by Kumar Pramod R et al² and Chandru K et al⁵ and Manish K et al⁷, Shrivastava P et al⁸, Kartikeyan et al⁹, Agrawal R et al¹⁰.
- In present study major causes of death comprises RTA 82 (52.5%) followed by disease 27(17.3). Which was consistent with the study conducted by Kumar Pramod R et al² and Chandru K et al⁵ and Manish K et al⁷, Shrivastava P et al⁸,Kartikeyan et al⁹,Agrawal R et al¹⁰.

Conclusion

Study conducted at Department of Forensic Medicine & Toxicology, VCSGGIMS &R, Srinagar, PauriGarhwal,Uttarakhand, to know the profile of medico legal autopsies during a period of 2 year from 1st January 2020 to 31st December 2021 comprising a total of 156 medico-legal autopsies. In our study we found that majority of cases were in 3rd and 4th decade of life, majority of victims were males as compared to females, rural residents were more in number, and Hindus being majority in number formed bulk of cases. RTA, Diseases, drowning and hanging were seen as leading cause of death. In our study most common method of suicide was found is drowning followed by hanging. The results of this study will raise public awareness and assist law enforcement organizations in developing efforts to reduce similar incidents.

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Conflicts of interest: There are no conflicts of interest

Ethical Clearance: Obtained from Institutional Ethical Committee.

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