

## ORIGINAL ARTICLE

# A Cross-sectional Study on Medicolegal Post-mortem Examination Conducted in a Tertiary care Medical College of West Bengal

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## Abstract:

Unnatural and suspicious deaths are grounds for performing medicolegal autopsy examinations. It is performed by forensic medicine experts and doctors trained in autopsy to determine the cause of death which is the prime objective of medicolegal autopsy. Apart from that, manner and mode of death, time since death, identification of the deceased are other important objectives. Mortality data from various unnatural deaths gives important information regarding the different violent incidents prevailing in society. The following study aims to make a cross-sectional observation on various unnatural deaths in a medical college police morgue in a particular time of the year. The police inquest reports and the autopsy reports were reviewed before starting the post-mortem examinations in the police morgue. It was a prospective study done over two months for the study time in the initial months of covid lockdown. All the cases during that period were included in the study. Data were tabulated first, then subjected to appropriate statistical methods and published as results. Of the 103 cases a male predominance of 69 cases was observed, and majority (90.2%) were Hindu by religion. The majority of the deceased were of age range 21 to 30 years followed by 41 to 50 years. Poisoning (35.3%) and hanging (33.3%) were found to be the most common causes of death whereas natural disease caused death in 6.9% of cases. The suicidal rate was the highest (81.1%) Suicidal death continues to be the majority of unnatural deaths. Poisoning and hanging claimed most of the lives whereas road traffic accidents, and accidental falls, caused significant mortality.

**Keywords:** Autopsy; Postmortem examination; Medicolegal; Unnatural death; Tertiary care; West Bengal.

## Introduction:

Medicolegal autopsy or post-mortem examination is done in all cases of sudden, suspicious, and unnatural deaths as per the law of our land.<sup>1,2</sup> Unnatural death stands for all death cases where death is not due to any disease, the definition of natural death being where death is solely due to a diseased or pathological condition where death is not intended attempted or accidental.

According to National Crime Records Bureau (NCRB) data, total 4,37,396 road accidents occurred in India in 2019, resulting in death of 1,54,732 people as one of the leading unnatural deaths circumstances.<sup>3</sup> Suicide was the leading cause for over 300 “non-coronavirus deaths” reported in India due to distress resulting from lockdown.<sup>4</sup>

Apart from unnatural death, suspected sudden deaths are also the cases where post-mortem examination has to be conducted. It means death occurring within 24 hours of onset of terminal illness in an apparently healthy individual without having any known history of disease, injury or poisoning.<sup>5</sup> In some unfortunate case where a patient suffering from a disease or pathological condition

reaches the emergency ward of a hospital or nursing home and is presented unconscious and found to be dead, i.e declared brought dead at presentation is yet another circumstance where compulsory medicolegal post-mortem or autopsy examination has to be conducted. In the covid era we have witnessed a huge pandemic sweeping our country and state. The lockdown and temporary unemployment scenario has caused a social and health burden on the health system of the country.

The prevailing scenario has also increased a sense of anxiety and depressive thoughts in a section of society leading to an increased burden of unnatural deaths. The present study has been carried out to analyze the pattern of such deaths requiring medicolegal autopsy in this part of the country, both due to natural and unnatural causes using autopsy database to determine distribution of deaths in different category in this part of the country.

## Materials and methods:

The study has been conducted in Police morgue of College of Medicine and JNM Hospital, Kalyani, West Bengal over a period of two months during initial first phase of covid era autopsied in the police morgue. The police inquest reports, and autopsy reports were reviewed and various demographic parameters were considered including age, sex and cause of death. All the cases coming for medicolegal autopsy have been included in the study. The results were subjected to tabulation in MS Excel spreadsheet and analyzed in the same.

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**Table 1. Age wise distribution of cases (n=102).**

| Age (years) | Number of cases | Percentage (%) |
|-------------|-----------------|----------------|
| 0-10        | 4               | 3.9            |
| 11-20       | 15              | 14.7           |
| 21-30       | 22              | 21.6           |
| 31-40       | 11              | 10.8           |
| 41-50       | 21              | 20.6           |
| 51-60       | 16              | 15.7           |
| 61-70       | 6               | 5.9            |
| 71-80       | 5               | 4.9            |
| 81-90       | 2               | 2.0            |
| Total       | 102             | 100            |

**Table 2. Distribution of cases according to cause of Death (n=102).**

| Cause of death                    | Number | Percentage (%) |
|-----------------------------------|--------|----------------|
| Natural disease                   | 7      | 6.9            |
| Burn Injury                       | 4      | 3.9            |
| Drowning                          | 8      | 7.8            |
| Electrocution                     | 3      | 2.9            |
| Fall from Height related injuries | 3      | 2.9            |
| Hanging                           | 34     | 33.3           |
| Poisoning                         | 36     | 35.3           |
| Road traffic injury               | 1      | 1.0            |
| Snake bite                        | 5      | 4.9            |
| Homicidal chop injury             | 1      | 1.0            |
| Total                             | 102    | 100            |

**Table 3. Distribution of cases according to manner of deaths (N=95).**

| Manner of death | Number | Percentage (%) |
|-----------------|--------|----------------|
| Suicidal        | 77     | 81.1           |
| Accidental      | 17     | 17.9           |
| Homicidal       | 1      | 1              |
| Total           | 95     | 100            |

### Results:

A total of 102 cases of unnatural deaths were studied over two months of period. Among all the cases majority (67.65%) were male and 33 were female (32.35%). According to religion, majority (n=92, 90.2%) were of Hindu religion, only 9 cases were Muslims (8.8%) and one case was from Christian (1%) community. Regarding age wise distribution of cases, it ranged from 7 years to 82 years. Category wise distribution is shown in Table 1. Highest frequency was noted in 21 to 30 years age group followed by 41 to 50 years. Least cases were in the age group 81 to 90 years.

Of all the cases, 7 cases found to be from natural disease and rest are unnatural deaths. The detailed distribution of cases has been shown in Table 2. Poisoning cases were highest in frequency (35.3%) followed by hanging (33.3%) and drowning (7.8%) cases. Death due to injury was seen to be least among all (only two cases). Regarding manner of death, most of the cases were suicidal (81.1%) followed by accidental variety (17.9%). Only one case of homicide was noted during the study period. The results are shown in Table 3.

### Discussion:

Among the autopsy cases during the study period, a male predominance was noticed. Similar results were obtained in a study conducted on demographic profile of autopsies in Punjab showing 79.8% male predominance by Munir et al.<sup>1</sup> In the present study, we got an increased number of males compared to females. It appears keeping in mind the increased number of suicidal

deaths that financial stress may play a major role in increased number of unnatural deaths in males. Moreover increased outdoor activities, though restricted during the covid lockdown period, also made the males more prone to unnatural death. Road Traffic accidents, falling from height and homicidal death are also seen commonly in men. In our study however the number of road traffic accident death claimed less lives than hanging and poisoning. It can be justified from the fact that the study period includes initial months of lockdown during first phase of covid era. So the vehicular movement was very less. Due to that fact, catering population from the developing area were less in connection to their professional work and daily labour job which led them to psychological stress and leading to suicidal tendency.

Our study also points to the fact that age between 21 to 50 were most common victims of unnatural death. In the study by Munir et al. age 21-40 were the most common victims.<sup>1</sup> Increased aggression and emotional stress makes this age more vulnerable to unnatural deaths.

Also majority of the unnatural deaths are Hindu. As the area around the medical college mostly are inhabited by Hindu population this is an obvious finding. Hanging and poisoning deaths were found to be maximum. Suicidal deaths were found to be on an increase after lockdown.<sup>6</sup> Insecurity, employment loss fear of being tested positive played a major role in people opting for committing suicides. Hanging in its face value goes in favour of suicides unless proved otherwise on the basis of circumstantial evidences. In a autopsy based study on hanging by Rao it was found that most of the victims suffered from self suspension.<sup>6</sup> the variations in dressing material in hanging and ligature material is found to be varying with occupation, social status culture and geographical location. Poisoning death is very common and popular in the country. Suicidal pesticide poisoning, is the most common mode of poisoning in India.<sup>7</sup>

Corrosive ingestion remains a common problem in India due to its use in toilet cleaning and lack of strict enforcement of laws.<sup>8,9</sup> weed killers or paraquat poisoning is also very commonly seen. The literature on paraquat poisoning in India is still not much and the proper evidence on management is lacking and so is survival reports.<sup>9</sup>

Burn claims a huge number of lives in India. Self-immolations accidental burn injury and multi organ failure following septicemia are commonly observed. In this study burn deaths were low. India recorded 25,467 deaths due to burns during the year 2000.<sup>8</sup> In this study the number of burn deaths have been found to be less. This can be due to the time of lockdown most people remaining at home and extra care by family members and lack of hurrying to work may have contributed to lesser burn injuries.

A few cases turned out to be natural cause after autopsies. In a study by Sanchez ollalo et al cardiac causes amounted to 56.87% of deaths in autopsied bodies with non violent causes of death.<sup>10,11</sup>

### Conclusion:

Suicidal deaths continue to be the majority of deaths in unnatural deaths. Poisoning and hanging claimed most of the lives whereas

road traffic accidents, accidental falls, caused significant mortality. A number of drowning and burn cases have been observed. Also a few of the autopsy studies revealed death due to natural disease condition.

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