



AN ANALYSIS OF MEDICOLEGAL AUTOPSIES CONDUCTED AT PATNA MEDICAL COLLEGE, PATNA (BIHAR)-A MORTUARY-BASED STUDY.

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ABSTRACT

Medicolegal autopsy, a statutory work is scientific examination of a dead body, its organ and structure in determining the cause, manner, and time since death in sudden suspicious, unnatural, unexpected, and unexplained deaths. The present retrospective study aims to find out incidences of fatal deaths and its causation and profiling of these deaths helps to understand the pattern of deaths and aid the investigating agencies. Thereby, guiding the government authorities for its prevention and health promotion. It is an attempt to provide information regarding the type of causes of unnatural deaths and directs measures of prevention in these respects. The present study is a retrospective study conducted in department of forensic medicine Patna medical College; Patna brought to the mortuary from Jan 2022 to Nov 2023 for medicolegal autopsy. The required information was sourced from relatives of deceased and I.O. of the case. Brief facts and history of the case along with inquest paper and mortuary departmental records. Out of total autopsies during this period among the unnatural deaths, road traffic accidents followed by railway accidents, burn injuries, hanging, strangulation, poisoning, smothering, fall from heights, gunshot injuries, decapitation, drowning, etc. was the order of occurrence. Males were commonly affected. Majority belonging to age group 21 to 30 years followed by 31 to 40 years. Death from road traffic accidents injuries is preventable with proper safety, traffic rules if observed by all. Majority of the cases in unknown cause of death was from lung, heart disease, liver disease, septicaemia, and poisoning. It is a major challenge and task of government to implement strict safety traffic rules and railway safety measures and in train and platform to avoid illegal trafficking and programs directed towards awareness by public and mental health and improving socio-economic conditions in public and legislation for strict implementation of caution in sell and purchase of poisons.

KEYWORDS : medicolegal autopsy; mortuary; road traffic accident

INTRODUCTION

Medicolegal autopsy, a statutory work is scientific examination of a dead body, its organ and structure in determining the cause, manner, and time since death in sudden suspicious, unnatural, unexpected, and unexplained deaths [1]. A forensic autopsy is carried out in situations involving suspected suicide, murder, accidents, persistent drug or alcohol abuse, mistreatment by medical personnel, unexpected deaths, long post-mortem delays (i.e., body decomposition), or other challenges in identifying the deceased [1,2]. The population of India is diverse and varies greatly by region in terms of lifestyle, customs, holidays, cuisine, and other aspects of daily life. These regional differences may have an impact on mortality trends.

Therefore, the mortality pattern varies by region in India. One important predictor of the ensuing health effects is the pattern of death.

The exact determination the cause of death is crucial for population-level health care planning as well as for families and other loved ones on an individual basis. The cause and manner of death, as well as the deceased's identity and the time since death, are established for medicolegal purposes. The information that is produced serves as proof to uphold legal enforcement practices. An autopsy is a scientific procedure used to determine the cause of death by looking through the body's cavities, organs, and entire outer surface of body [3,4].

The clinical autopsy is a diagnostic procedure used to determine the cause of death and is regarded as a crucial instrument for evaluating healthcare quality. However, in situations where law enforcement agencies have a stake in confirming or averting suspicions related to criminal offences, autopsies are referred to as medicolegal. An autopsy is also frequently conducted in situations where the cause of death is thought to be unusual and raises questions about whether it

was accidental, suicidal, or homicidal in nature [1,5].

To determine the mortality statistics pertaining to unnatural deaths in a particular area require an examination of the frequency and pattern of unnatural deaths.

Furthermore, identifying patterns in medicolegal cases can help reduce the number of avoidable deaths in the future.

The results of this study may aid in understanding the prevalence of unnatural deaths in the area and informing the development and application of preventative measures by government agencies, law enforcement agencies, and public health policy makers.

The present retrospective study aims to find out incidences of fatal deaths and its causation and profiling of these deaths helps to understand the pattern of deaths and aid the investigating agencies. Thereby, guiding the government authorities for its prevention and health promotion. It is an attempt to provide information regarding the type of causes of unnatural deaths and directs measures of prevention in these respects.

MATERIALS AND METHODS:

The present study is a retrospective study conducted in the department of Forensic Medicine & Toxicology, Patna Medical College and Hospital, Patna (Bihar). A total of 2754 autopsies performed during the period of Jan 2022 to Nov 2023 were analysed. The required information was sourced from relatives of deceased and I.O. of the case. Brief facts and history of the case along with inquest paper and mortuary departmental records. Various parameters like age, sex, month, religion, manner, and cause of death were taken into consideration. The information was compiled, tabulated, and analysed. Causes of death were broadly categorized as accidental in nature homicidal, natural, and suicidal. If the cause of death did not fall into one of the specified categories, it was labelled as "other."

The data was entered and analyzed through graphpad, Microsoft excel 2013. The objective of the study to find out incidences of fatal deaths and its causation and profiling of these death helps to understand the pattern of deaths and aid the investigating agencies.

RESULTS:

A total of 2754 autopsies were analysed in this study. There were 2034 (74%) males and 720 (26%) females. The age of deceased ranged from one year to 85 years with mean age of 33.09 years. The highest frequency of both males and females belonged to age group between 18 and 60 years old followed by teens 11-20 years and children 1-10yrs. The least number of autopsies was observed in children with age from 1 to 10 years (Table 1). Out of total autopsies, most common manner of death was accidental in nature followed by homicidal, natural, and suicidal, respectively (Table 2). Most common mode of accidental death was RTA followed by railway and fall from height. In homicidal death, most common mode was assault in nature (Table 3).

Table 1: Age and sex-wise distribution of cases

Age of deceased	Total no affected age-wise	NO. of male affected age-wise	% of male affected age-wise	No. of female affected age-wise	% of female affected age-wise
0-10 years	48	30	62.5%	18	37.5%
11-20 years	270	204	75.5%	66	24.5%
21-30 years	480	384	80%	96	20%
31-40 years	270	198	73.3%	72	26.7%
41-50 years	374	278	74.3%	96	25.7%
51-60 years	308	197	64%	111	36%
>60 years	188	136	72.3%	52	27.7%

Table 2: Distribution based on Manner of Death

Manner of Death	Total	Male	Female
Accidental	1938 (70.37%)	1446(74.6%)	492 (25.4%)
Homicidal	318 (11.54%)	222(69.8%)	96 (30.2%)
Natural	258 (9.36%)	210 (81.3%)	48 (18.6%)
Suicidal	240 (8.71%)	168 (70%)	72 (30%)

Table 3: Showing distribution on the basis of Causes of Death

1. Mode of Accidental Death	Total No autopsy	Total no.& % of male	Total no. & % of female	Most common Organs/body parts Affected	Cause of Death
RTA	1128	930 (82.4%)	198 (17.5%)	Brain	Head injury
Railway Accident	312	282 (90.3%)	30 (9.6%)	Head, Chest, Limbs, Crush injuries	Polytrauma
Burn	192	84 (43.7%)	108 (56.2%)	MOF	Septicemia
Fall from height	186	150 (80.6%)	36 (19.3%)	Brain, Spinal, Multiple fracture	Head injury, Embolism
Drowning	72	60 (83.3%)	12 (16.6%)	Lungs	Asphyxia
Electric current	36	30 (83.3%)	6 (16.6%)	Heart, Lungs	Atrial fibrillation, Respiratory paralysis
2. Mode of Homicidal Death	Total No autopsy	Total no. & % of male	Total no.& % of Female	Most common Organs/body part Affected	Cause of Death

Assault	156	90 (57.6%)	66 (42.3%)	Head	Head injury
Firearm injury	66	60 (90.9%)	6 (9%)	Chest, Abdomen, Head	Haemorrhagic Shock
Custodial	48	47 (97.9%)	1 (2.1%)	Head/ MOF	Head injury/ Underlying disease
Stab	30	21 (70%)	9 (30%)	Abdomen	Haemorrhagic shock
Strangulation	18	7 (38.8%)	11 (61.1%)	Lung	Asphyxia
3. Mode of Suicidal Death	Total No autopsy	Total no. of male	Total no. of Female	Most common Organ Affected	Cause of Death
Poisoning	120	102 (85%)	18 (15%)	Liver, stomach	Poisoning
Hanging	108	72 (66.6%)	36 (33.3%)	Lungs, pressure effect	Asphyxia
Drowning	12	11 (91.6%)	1 (8.4%)	Lungs	Asphyxia
4. Mode of Natural Death	Total No autopsy	Total no.& % of male	Total no.& % of Female	Most common Organ Affected	Cause of Death
Liver disease	110	102 (92.7%)	8 (7.3%)	Liver	Cirrhosis
Heart disease	64	56 (87.5%)	8 (12.5%)	Heart	Hypertrophy with coronary blockage
Lung disease	50	30 (60%)	20 (40%)	Lungs	Bronchopneumonia, Pulmonary TB, etc
Miscellaneous	34	22 (64.7%)	12 (35.3%)	Multiple organs	Sepsis

DISCUSSION:

A total of 2754 autopsies were analysed in this study. There were 2034 (74%) males and 720 (26%) females. In the present study, out of total 2754 autopsy cases, 2034(74%) were male and 720(26%) were female" Radhakrishna KV et al [3] and Rathod AL et al [1] found similar results with a male predominance constituted 74.62% and 69.5% of the total. Similar results with a male preponderance were also noted in other studies of this kind [2,4,5,6,7,8]. Males are more susceptible to accidents, violence, and stress because still in India male typically earn a living while women handle household chores. Males are also more likely than females to smoke, drink, and engage in other unhealthy behaviours, which increases their risk of accidents and early natural deaths. The highest number of deaths, 630 (22.8%), occurred in the age group of 21 to 30 years. These results were similar with research conducted by Rathod AL et al [1], Radhakrishna KV et al [3], and Bhabhor R et al [4], which found that 473 cases (27.1%), 340 cases (25.6%), and 257 cases (24.71%) were found in these age groups, respectively.

This age group is more vulnerable than others because they are adults who participate in most of the activities. Out of total autopsies, most common manner of death was accidental in nature followed by homicidal, natural, and suicidal, respectively. Most common mode of accidental death was RTA

followed by railway and fall from height. In homicidal death, most common mode was assault in nature. In the present study, out of total deaths, most common manner of death was accidental in nature i.e. 1938 (70.37%) followed by homicidal deaths i.e. 318(11.54%) and natural deaths i.e. 258 (9.36%) and suicidal death i.e. 240 (8.71%). This result is consistent with research by Singh D et al [9] and Ramalingam S et al. [5]. In the present study, the maximum number of deaths were due to RTA (40.9%), followed by Railway accident (11.16%) and burn (6.4%). This finding is similar with the study conducted by Rathod AL et al [1], Radhakrishna KV et al [3], Bhabhor R et al [4], Ramalingam S et al [5] and Atrey A et al [11]. Similar results were also noted in another similar research [3,4,5,6,7,8,9,10,11]. This is because roadways are becoming more clogged and crowded with more vehicles, and a lack of traffic awareness results in more accidents. In all modes of deaths males were affected more when compare with females. The only mode of death in which females were affected more was burn in 56.2%. Similar findings that burns are a leading cause of death for females were also noted in studies by Mugdlimath A et al. [10]. This is because they spend most of their time in the kitchen, where they engage in fire-dependent tasks like boiling water, brewing tea, and cooking food. In homicidal death, most common mode was assault in nature whereas in case of suicidal death, most common mode was poisoning in nature followed by hanging. in case of natural deaths most common cause was due to liver disease. This could be because of more alcohol consumption.

CONCLUSION:

Our study concludes that RTA was major cause of death among all deceased in Bihar. It is a major challenge and task of government to implement strict safety traffic rules and railway safety measures and in train and platform to avoid illegal trafficking and programs directed towards awareness by public and mental health and improving socio-economic conditions in public and legislation for strict implementation of caution in sell and purchase of poisons

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