

PATTERN OF MEDICOLEGAL AUTOPSIES CONDUCTED AT TIRUPATI, ANDHRA PRADESH: A 3-YEAR RETROSPECTIVE STUDY

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ABSTRACT

Objectives: Death of an individual is a grave loss to the family and community at large. Death may be natural or unnatural. Analysis of unnatural deaths helps in understanding the causes, manner, and modes of deaths, thereby formulate and implement a proper policy to reduce incidence.

Methods: This is a retrospective study of autopsies conducted over 3 years (2018–2020) in the mortuary of Sri Venkateshwara Medical College, Tirupati. During this period, 2579 autopsies were performed. Required data were collected from the requisitions of police, inquest reports, case sheets, medicolegal register, and postmortem reports in a preformed pro forma.

Results: Out of the 2579 cases, majority were in the age group of 21–30 years (34.62%) followed by 41–50 years (18.06%). Male-to-female ratio was 2.5:1. Majority were Hindus (83.52%) and most of the subjects belonged to the rural areas (62.89%). Majority were married (78.40%). The most common cause of death was road traffic accident (48.04%) followed by poisoning (15.82%). Accidental deaths were the most common manner of death (60.56%) followed by suicides (33.96%).

Conclusion: The present study reveals that the most cases were in 21–30 years age group. Males outnumbered females and the subjects were mostly married and were from rural areas. Road traffic accidents were common cause of death in males and poisoning was the common cause of death in females.

Keywords: Pattern, Medicolegal cases, Autopsy, Cause of death, Road traffic accidents.

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INTRODUCTION

Five hundred and fifty-four million people die each year around the world. Of this, 44 million people die because of injuries. This accounts for about 8% of all deaths [1].

As per UN report, crude death rate in India between in 2015 and 2020 is 7.2 [2].

India is a vast country with great diversities and regional variation among its population in their living, culture, festivals, food habits, and other daily livelihood and this regional variation may affect the death trends [3].

Deaths due to unnatural causes include road traffic accidents, railway accidents, mechanical asphyxia, drowning, accidental fire, electrocution, poisoning, fall from heights, killed by animals, illicit liquor, snakebites, and food poisoning.

The pattern of these unnatural deaths is essential to know the various mortality statistics and parameters of a region which further helps in addressing the problems and issues specific to that region. It is also necessary to prevent the preventable casualties in future and to study the genuine crime rate in the area.

This study aims to set up a pattern of deaths and analyze the distribution of medicolegal autopsies conducted, to make holistic efforts to curb their incidence. The finding of this study will also help in understanding the variety of unnatural causes of mortality in the region and creates awareness among the people. Policy-makers, law enforcement agencies, and other organizations can utilize the findings of this study to plan and implement strategies for prevention of such incidences.

METHODS

The present study is a retrospective study of medicolegal autopsies conducted in the Department of Forensic Medicine, Sri Venkateshwara Medical College, Tirupati, Andhra Pradesh, India, from January 2018 to December 2020. Detailed information regarding the circumstances of death was collected from inquest, hospital records, and postmortem report.

During the study period, 2579 medicolegal autopsies were conducted. Various parameters such as age, sex, marital status, religion, causes of death, and manner of death were observed and the data were compiled and analyzed maintaining at most confidentiality. Causes of death were grossly classified as road traffic accidents, burns, electrocution, hanging, railway injuries, drowning, poisoning, and other natural causes.

RESULTS

A total of 2579 medicolegal autopsies were conducted during the study period. Data from these autopsies were collected and analyzed, and subsequent observations were drawn. From the data, it is observed that 71.46% of cases were male and 28.53% were female (Table 1). Males outnumbered females with male-to-female ratio of 2.5:1. Most number, that is, 34.62% of cases were in the age group of 21–30 years, followed by 18.06% in 41–50 years age group and least number of cases (0.73%), was seen in 0–10 years age group (Table 1).

Out of 2579 cases, 98.78% of cases were identified, 1.27% of cases were unidentified. Of the identified, 82.9% were Hindu, 13.53% were Muslim, and 2.28% were others (Fig. 1). Majority of the cases were from rural areas with 62.89% of cases and 37.10% were from urban areas (Fig. 2). Out of 2579 cases autopsied, 76.96% of cases were married,

21.75% of cases were unmarried, and in 1.27% of cases, marital status was not known (Fig. 3).

Accidental deaths dominated the present study with 1562 (60.56%) cases followed by suicidal 876 (33.96%), natural deaths 100 (3.87%), and homicidal deaths 33 (1.58%) (Table 2). Death due to road traffic accident (48.04%) was the most common cause of death, followed by poisoning (15.8%), burn injuries (7.25%), hanging (5.58%), railway accidents (5.38%), and drowning (4.5%). Minor causes of death include deaths due to accidental occupational injuries (7, 0.27%), blast injuries (6, 0.23%), and gunshot injuries (1, 0.03%), which were accidental in nature and operational deaths (2, 0.07%), pathology or disease related (98, 3.79%) which were natural deaths (Table 2).

Table 1: Age and gender distribution of cases

Age group	Male	Female	Total
0-10	15	4	19 (0.73%)
11-20	103	37	140 (5.42%)
21-30	628	265	893 (34.62%)
31-40	317	147	464 (17.99%)
41-50	335	131	466 (18.06%)
51-60	238	84	322 (12.48%)
61-70	102	45	147 (5.69%)
71-80	71	15	86 (3.33%)
>80	34	8	42 (1.62%)
Total	1843 (71.46%)	736 (28.53%)	2579 (100%)

Deaths due to road traffic accidents were more common in males (1033, 56.04%) when compared to females (206, 27.98%) where deaths due to poisoning were more common in females (219, 29.75%) when compared to males (189, 10.25%); similarly, burns and hanging were more common in females when compared to males (Fig. 4).

DISCUSSION

A total of 2579 cases of medicolegal autopsies were performed by the department of forensic medicine during the study period. Out of 2579 cases, maximum number of postmortems was in the age group of 21-30 years (34.62%), which is the most productive period in one's life. It is an adult age group which is mostly involved in activities of life and prone for danger (Table). Similar findings were noted in the studies conducted by Rathod et al. [3], Radhakrishna et al. [4], and Bhabhor and Parmar [5].

Males outnumbered the women by 2.5:1. Most of the times males are the sole bread earners of the family being exposed to harms such as road traffic accidents, railway accidents, violence, and stress. Males are more prone for addiction and risk taking. Similar findings were reported by Rathod et al. [3], Radhakrishna et al. [4], Bhabhor and Parmar [5], Murthy et al. [6], Prabjot [7], and Junaidi et al. [8].

Of the study population, 82.9% of cases were Hindus and 13.53% were Muslims, which are in tune with the population percentage of this region. Religion was not known in 1.27% of cases as

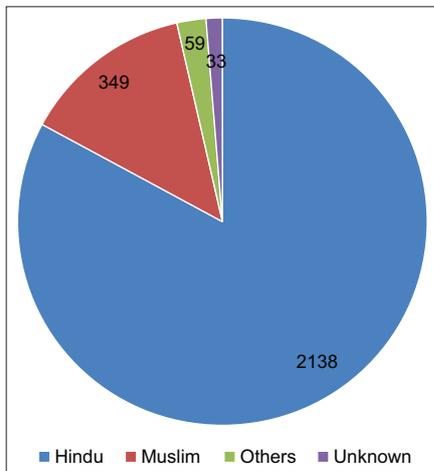


Fig. 1: Distribution of cases according to religion

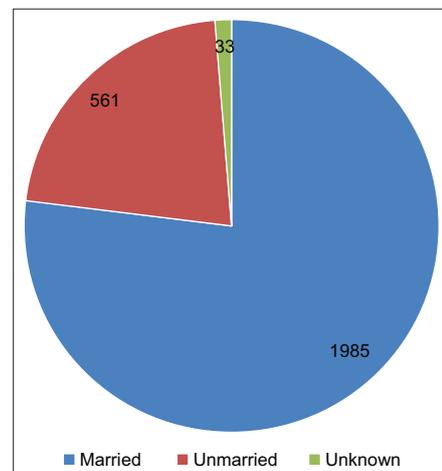


Fig. 3: Distribution of cases according to marital status

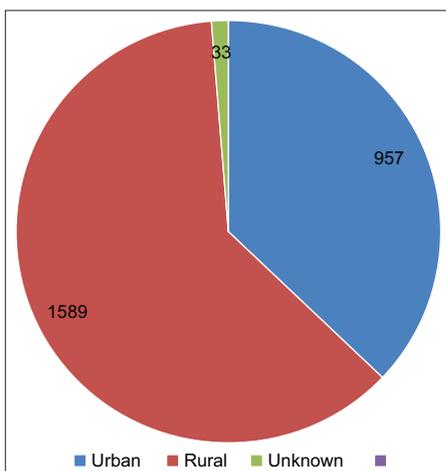


Fig. 2: Distribution of cases according to region

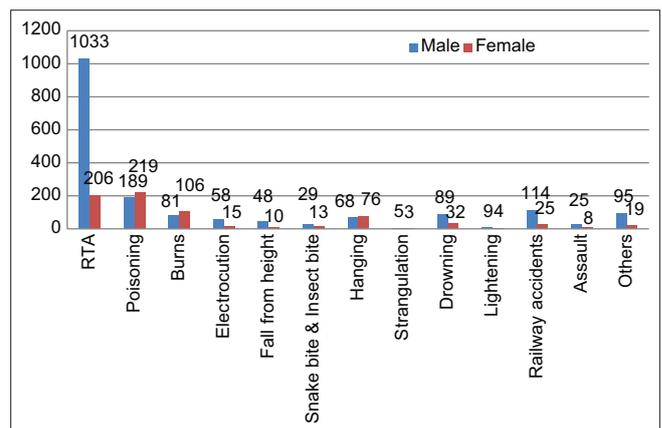


Fig. 4: Cause of death - sex distribution

Table 2: Cause of death – manner of death

Causes of death	Accidental	Suicidal	Homicidal	Natural	Total (percentage)
RTA	1239	-	-	-	1239 (48.04188)
Poisoning	10	398	-	-	408 (15.82009)
Burns	36	151	-	-	187 (7.250872)
Electrocution	73	-	-	-	73 (2.830554)
Fall from height	49	9	-	-	58 (2.248934)
Snakebite and Insect bite	42	-	-	-	42 (1.628538)
Hanging	2	142	-	-	144 (5.58356)
Strangulation	-	-	8	-	8 (0.310198)
Drowning	39	82	-	-	121 (4.691741)
Lightening	13	-	-	-	13 (0.504071)
Railway accidents	45	94	-	-	139 (5.389686)
Assault	-	-	33	-	33 (1.279566)
Others	14	-	-	100	114 (4.420318)
Total	1562	876	41	100	2579 (100%)

their identity is not known. Similar findings were observed by Radhakrishna *et al.* [4], Manish *et al.* [9], and Mugadlimath *et al.* [10].

About 62.89% of the cases of autopsies were from rural areas and only 37.10% were from urban areas. This is because of the catchment area being rural and most of the cases are referred from far off places as it is tertiary care center. Similar findings were seen in studies by Manish *et al.* [9] and Junaidi *et al.* [10]; contradictory findings were seen in Radhakrishna *et al.* [4].

In the present study, out of total 2579 autopsies, most of the deaths were accidental in nature 1562 (60.56%), followed by suicides 876 (33.96%), natural deaths 100 (3.87%), and homicides 33 (1.58%). Similar findings were reported in the studies conducted by Singh *et al.* [7] and Ramalingam and Narendar [11]. Contrary findings were reported by Manish *et al.* [9].

Road traffic accidents and its complications accounted as major cause of death with 48.04% cases followed by poisoning (15.8%) and burn injuries (7.25%). Similar findings were observed by Radhakrishna *et al.* [4], Manish *et al.* [9], and Rathod *et al.* [3]. Most of the road traffic accidents are referred to this center from far off places as it is a tertiary care center, and moreover, the presence of many superspecialty hospitals in the area also adds to it. The other reason being a pilgrim center people come from different places after long road journeys making the drivers exhausted and lacking control over the vehicles. The ghat road to the temple also increases the chances of accidents and deaths.

Deaths due to road traffic accidents were more common in males (1033, 56.04%) whereas deaths due to poisoning were more common in females (219, 29.75%). Deaths due to burns and hanging were more common in females when compared to males. Similar observation was made by Rathod *et al.* [3] and Kumar *et al.* [12]. This is because males have more access to the vehicles and are the primary drivers whereas females are mostly in the homes and kitchens and have ready access to poisons and flammable substances.

CONCLUSION

This study helps to analyze different types of medicolegal autopsy cases, thereby providing an insight into the policy-makers, law enforcement departments, and the community to investigate the specific aspects of the cases and then take proper measures accordingly for the benefit of the community. There is a need to implement traffic rules strictly and reinforce awareness programs regularly. Sale, storage, and procurement of agrochemicals should be controlled through strict legislations and its implementation should be monitored.

AUTHORS' CONTRIBUTIONS

Author 1: Conceived and designed the analysis and critical revision of the article. Author 2: Collected the data and performed analysis. Author 3: Wrote the paper and performed the analysis.

CONFLICTS OF INTEREST

Nil.

AUTHORS' FUNDING

Self.

ETHICAL CLEARANCE

It is a retrospective study and identity of the deceased is nowhere disclosed. Therefore, the approval of Institutional Ethics Committee is not required.

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