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RESEARCH PAPER

Sociodemographic and medico-legal aspects of the autopsy conducted at a District Hospital in Northeastern State Tripura

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ABSTRACT

Background and aims: Medico-legal postmortem examinations are conducted in all suspected cases of death as a mandatory protocol to know the actual cause of death. The study of the social, personal and medico-legal aspects aims to draw the attention of the authority and the public towards improving the prevailing situation of medico-legal works. This study aims to analyze the profile of medico-legal autopsies and formulate measures to improve the scenario. **Materials and methods:** This study is a retrospective analysis of medico-legal autopsies performed in the mortuary of District Hospital Gomati, Tripura, from January 2018 to December 2020. **Results:** In this study, 536 cases of autopsies during the study period are analyzed in various medico-legal aspects. The maximum deaths were among males and reported against the 5th & 6th decade's age group, and natural deaths were the common cause of death. Among unnatural deaths are hanging, poisoning, assault, drowning, etc. **Conclusion:** The study has demonstrated that asphyxial death outnumbered the poisoning and other causes of death. The proportion of natural death is more than unnatural death among all medico-legal autopsies conducted during the study period. So, there is scope for reviewing the current standard procedures with caution.

Keywords: Profile of death; asphyxia; homicide; suicide; accident; RTA; poisoning.

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INTRODUCTION

Medico-legal autopsy in India is conducted in all cases of sudden, suspicious and unnatural deaths. In such instances, the treating doctor in institutional deaths does not ascertain the clinical cause of death.¹

As per Section 174 of the Criminal Procedure Code 1973, if any patient presented to the hospital in dead condition and attended doctor if feels that there is suspicion of foul

play in the causation of death, be it accidental, suicidal or homicidal, he is legally bound to inform police for investigation and subsequently post-mortem examination is indicated.

The aims of a medico-legal autopsy generally are to establish the identification of the deceased, if not identified by all possible means, to ascertain the medical cause of death and whether the death was natural or unnatural and if unnatural, the manner of death, whether homicidal, suicidal, or accidental, and the time since death, etc.

The medico-legal profile of all autopsy cases is of utmost importance in critically analyzing the death statistics in an area due to natural and unnatural causes and knowing the demographic characteristics specific to that particular region. It is also necessary to prevent future preventable casualties and study the actual crime rate in the area.²

Therefore, this study is initiated to analyze the scenario of medico-legal workload in a small district hospital of State Tripura and the profile of deaths brought for postmortem examination and to find remedial measures to reduce the incidences.

MATERIALS AND METHOD

A retrospective descriptive analysis of medico-legal autopsies was performed in the mortuary of District Hospital Gomati, Tripura, from 2018 January to 2020 December. Data regarding demographic and medico-legal importance were collected from the case sheets, investigating authority inquest reports and postmortem reports of the record section of the hospital. All the autopsies conducted in this set-up during the study duration were included. The data collected were compiled, tabulated and analyzed using Microsoft excel.

Ethical clearance was taken from the institute, along with informed consent.

RESULTS

Five hundred thirty-six (536) medico-legal autopsies were conducted during the study period from January 2018 to December 2020, out of which 386(72.01%) were males, and 150(27.98%) were females, as shown in **Table 1**.

Table 1 Sex wise distribution of deaths

Sex	Number of deaths	Percentage (%)
Male	386	72.02
Female	150	27.98
Total	536	100

The maximum number of autopsy cases, i.e. 187(34.87%), were in the age group of 51-60 years, followed by 31-40 years, i.e. 134 cases (25.01%) and 21-30 years and 11-20 years comprising of 80 cases (14.93%) and 57 cases (10.63%) respectively as shown in **Table 2**.

Table 2 Age Wise Distribution of Cases

Age group	Total	Percentage (%)
0-10	09	01.67
11-20	57	10.63
21-30	80	14.93
31-40	134	25.01
41-50	48	08.96
51-60	187	34.87
61-70	21	03.93
Total	536	100

Hindus were the majority in number, with 455 cases (84.88%), followed by Muslims with 64(11.94%), and 17(2.72%) cases were from Christianity and Buddhism, as shown in **Table 3**.

Hindus were the majority in number, with 455 cases (84.88%), followed by Muslims with 64(11.94%), and 17(2.72%) cases were from Christianity and Buddhism, as shown in **Table 3**.

Table 3 Religion Wise Distribution

Religion	Number of cases	Percentages
Hindu	455	84.88
Muslims	64	11.94
Christian	9	01.68
Buddhist	8	01.49
Total	536	100

Most of the deaths were of natural causes (n=283, 52.80%) followed by suicidal (n=125, 23.32%) as shown in **Table 4**.

Table 4 Manner Wise Distribution of Cases

Manner of Death	Number of cases	Percentages
Natural	283	52.80
Suicidal	125	23.32
Accidental	112	20.89
Homicidal	16	02.98
Total	536	100

Most of the deceased were from rural backgrounds comprising 75% compared to urban areas of 25%, as shown in **Table 5**.

Table 5 Distribution of Cases according to the place of residence

Region	No. of Cases	Percentage
Urban	135	25.18
Rural	401	74.82
Total	536	100

There were a plethora of causes of death during the study period. Out of which, natural diseases were the most common cause of death (n=277, 51.96%), followed by hanging (n=81, 15%) and poisoning (n=52, 10%), as shown in **Table 6**.

Table 6 Distribution of cases according to the cause of death

Cause of death	No. of Autopsies	Percentage (%)
Natural disease	277	51.96
Hanging	81	15
Poisoning	52	10
Assault	24	04.29
Drowning	15	02.79
RTA	14	02.61
Railway accidents	10	01.86
Fall from height	08	01.50
Burns	07	01.30
Lightning	07	01.30
Electrocution	05	00.93
Negative Autopsy	05	00.93
Firearm injury	05	00.93
Strangulation	04	00.74
Stillborn	04	00.74
Elephant stampede	03	00.55
SIDS	02	00.37
Custodial death	02	00.37
Traumatic asphyxia	01	00.18
Total	536	100

In the present study, the asphyxia (n=101) comprising hanging contributed to 81 cases (80.20%), drowning 15(14.85%), strangulation 04(03.96%), and traumatic asphyxia 01(0.99%) cases, as shown in **Table 7**.

Table 7 Type of asphyxial death

Type of asphyxia death	No. of Cases	Percentage
Hanging	81	80.20
Drowning	15	14.85
Strangulation	04	03.96
Traumatic	01	0.99
Total	101	100

Cardiovascular events were the most common of all instances of natural death (50%), followed by the central nervous system (18%) and others in decreasing frequency. The distribution of deaths due to natural deaths with sex-wise distribution is shown in Table 8.

Table 8 distribution of deaths due to natural deaths and their sex-wise distribution

System Involved	No. of Cases	Percentage
Cardiovascular System	133	49.99
Nervous System	50	17.66
Respiratory System	32	11.30
Gastrointestinal System	30	10.60
Genitourinary System	25	08.80
Multisystem	13	04.62
Total	283	100

DISCUSSION

In our study, the maximum number of autopsy cases (n=187, 34.87%) were in the age group of 51-60 years, followed by 31-40 years, i.e., 134 cases (25.01%). These findings are inconsistent with Aggarwal R et al.,⁴ and ME Gannur DG et al.⁶ The death incidence was higher in the late 50s because the maximum cases of brought dead were referred cases from other Primary Health Centres and those with previous age-related co-morbidities.

Most victims were male, 386(72%) compared to 150(28%) females. Similar findings were observed in studies done by Gannur DG et al.,⁶ Murthy MSN et al.,⁷ and Sharma BR et al.,⁸ in the North Delhi area. The reason is that males are bread earners, and females usually do household work, which makes the males more vulnerable to accidents, violence and stress.

In our study, 84.88% were Hindus, 11.94% were Muslims and others in minor cases. Similar findings are observed in studies by Junaidi K A et al.²

Most of the deceased were from rural areas as compared to urban areas. From all means of asphyxia, hanging is the most common mode of suicide in this region, followed by drowning and homicidal strangulation cases. Similar findings were observed in a study by Aggarwal R et al.⁴

Among all natural deaths, the cardiovascular system was primarily involved, which is following Aggarwal R et al.⁴

In our work, the most common manner of death was observed to be natural 283(52.80%), followed by suicides 125(23.32%) and accidental 122(20.89%), which was inconsistent with the study conducted by Pawar CK et al.,⁹ and Gannur DG et al.,⁶ where the study was conducted in Medical Colleges. The cases of accidents where the victim is fit to be referred to the higher centre are less than those brought death by natural causes. As observed in other authors' studies, this scenario of District set-up is uncommon in all Tertiary care hospital Mortuaries.

CONCLUSION

The above study discovered that the most natural deaths were subjected to a medico-legal autopsy on the requisition from Medical Officers' following the guidelines of 174 CrPC. Consequently, many unnecessary postmortems were conducted during the study period leading to wastage of time and human resources, which has the scope of improvement with permission from the authority. Suicides being the standard mode of death, awareness and mental health program implementation are need of the hour.

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