

A Pattern of Unnatural Mortalities at Tertiary Care at Sarguja Region of Chhattisgarh: A One-Year Retrospective Study

Prakash Deepak¹, Kumar Gyanendra², Agrawal Rahul³, Xaxa Sanjeev⁴

^{1,4}Assistant Professor, Department of Forensic Medicine & Toxicology, RSDKS Government Medical College, Ambikapur, Sarguja, ²Associate Professor & Head, Department of Forensic Medicine & Toxicology, CIMS, Bilaspur, ³Assistant Professor, Department of Forensic Medicine & Toxicology, CIMS, Bilaspur.

How to cite this article: Prakash Deepak, Kumar Gyanendra, Agrawal Rahul et. al. A Pattern of Unnatural Mortalities at Tertiary Care at Sarguja Region of Chhattisgarh: A One-Year Retrospective Study. Medico Legal Update / Volume 24 No 1, January-March 2024.

Abstract

The pattern of unnatural mortalities reflects the prevailing social set-up and mental health status of the region. To understand the magnitude and pattern of unnatural deaths in the Sarguja region of Chhattisgarh, a one-year retrospective study was carried out in the Department of Forensic Medicine, RSDKS Government Medical College, Ambikapur, Sarguja. The study revealed a male predominance-affected age group of 21-30 years, followed by 31-40 years, mostly in summer. We found that head injury and polytrauma are major causes of unnatural death; they contribute mainly to traffic accidents.

Key word: Unnatural Death, Manner of Death.

Introduction

According to the Bhagavad Gita, Lord Krishna said: - "One who has taken his birth is sure to die, and after death one is sure to take birth again" (Chapter 2 verse 27).

Death is inevitable. It has been lamented for centuries. Thanatology (Greek thanatos = death, logos = science) is a branch of medical science that deals with the study of death¹. Death is the extinction of life, indicated by a complete and prolonged cessation of respiration and circulation combined with a complete cessation of brain function².

Section 46 IPC defines death denotes death of a

human being unless the contrary appears from the context³.

An unnatural death was defined as any death caused by external causes, which could be intentional or unintentional⁴. The manner of death refers to the way in which the cause of death occurred. If the death is due to an illness, the manner of death is 'natural', and if it is due to an injury, the manner of death is 'violent'/unnatural.

Violence can result in an accident, suicide, or homicide, depending on the circumstances. The manner of death here in India is determined by the court after examining all aspects of the case, including the doctor's statements and his interpretation of the findings.

Corresponding Author: Xaxa Sanjeev, Assistant Professor, Department of Forensic Medicine & Toxicology, RSDKS Government Medical College, Ambikapur, Sarguja.

E-mail: sanjeevxaxa722@gmail.com

Mobile No: 9826347557

Submission date: December 6, 2023

Revision date: Dec 15, 2023

Published date: Feb 14, 2024

In the United States and some other countries where there is a 'Medical Examiner System,' the manner of death is also expected from the doctor after he has examined the scene/incident and the victim⁵.

Factors leading to unnatural deaths include traffic accidents, poisoning, falls, drowning, fires, burns, smoke, firearm discharge and electrocution⁶. Other factors include deaths from space programming, death in sports, industrial accidents, collapsed buildings and unsafe sleeping places⁷.

In our study conducted at RSDKS Government Medical College, Ambikapur, Sarguja To understand the magnitude and patterns of unnatural deaths, the study included those who were brought for postmortem during the period from January 1, 2022 to December 31, 2022.

Aims of the study

In this study, we will find out how the pattern of unnatural death affects the frequency, age, sex, seasonal variation, and type of death, and find remedies to reduce the frequency.

Material and Methods

The present study is conducted in the Department

of Forensic Medicine, RSDKS Government Medical College, Ambikapur, Sarguja. The department receives cases for autopsy from district of Sarguja region. Only the cases whose cause of death was unnatural i.e., homicide, suicide and accident and doubtful cases grouped as undetermined were selected.

The data is analysed retrospectively for the period of one year from January 1 to December 31, 2022. All data were collected from the records in the department. From the first of January to the end of December 2022, a total of 799 autopsies were performed in the morgue of the Department of Forensic Medicine. Of these, 3 intrauterine foetuses and 1 skeletonized remains were excluded from the study.

Observation and Results

1. Gender-specific distribution of cases:

S.No.	Gender	No. of cases	Percentage
1	Male	581	73.08%
2	Female	214	26.92%
Total		795	100

Table 01: - Gender wise distribution of unnatural deaths shows that most of the cases were males (73.08%) while females constituted 26.92%.

2. Age and Sex wise distribution of the cases:

S.No.	Age in year	Male	Female	No. of cases	Percentage
1	< 1	03	07	10	1.26%
2	1-10	14	12	26	3.27%
3	11-20	68	38	106	13.33%
4	21-30	174	53	227	28.55%
5	31-40	122	38	160	20.13%
6	41-50	90	31	121	15.22%
7	51-60	55	12	67	8.43%
8	61-70	40	16	56	7.04%
9	>70	15	07	22	2.77%
Total		581	214	795	100

Table 02: The age and sex wise distribution of unnatural deaths shows that the age group of 21 to 30 years was the most affected (28.55%), followed by

the age group of 31 to 40 years (20.13%) and the age group of less than one year was the least affected.

3. Seasonal variation in the distribution of cases:

S.No.	Seasonal distribution (Month)	No. of cases	Percentage
1	Summer (March -June) Jan	299	37.61%
2	Rainy (July - October) Feb	268	33.71%
3	Winter (Nov.-February) March	228	28.68%
Total		795	100

Table 03: The study shows that the seasonal distribution of unnatural deaths, most cases in the summer season 37.61%, followed by the rainy season 33.71% and in the winter season 28.68%.

4. Cause of death according to distribution of cases:

S. No.	Cause of death	No. of Cases	Percentage
1	Head Injury	179	22.52%
2	Polytrauma	124	15.61%
3	Hanging	91	11.45%
4	Poisoning	85	10.69%
5	Pending (For chemical analysis)	69	8.68%
6	Natural	60	7.55%
7	Snake Bite	51	6.42%
8	Drowning	37	4.65%
9	Burn	30	3.77%
10	Abdominal Injury	13	1.63%
11	Electrocution	11	1.38%
12	Thoracic Injury	09	1.13%
13	Animal (Elephant, Bull, Tiger and Dog) Assault	09	1.13%
14	Aspiration	06	0.75%
15	Bee Sting	06	0.75%
16	Undetermined	05	0.63%
17	Limb Injury	04	0.50%
18	Lightning	03	0.38%
19	Strangulation	03	0.38%
Total		795	100%

Table 04: The distribution of unnatural causes of death shows that the main causes are head injuries and polytrauma, which occur most frequently in traffic accidents, followed by falls from a height, hanging and poisoning.

5. Manner of death - distribution of cases:

S. No.	Manner of death	Male	Female	No. of Cases	Percentage
1	Natural	42	18	60	7.55%
2	Suicidal	130	64	194	24.40%
3	Accidental	351	106	457	57.48%
4	Homicidal	14	11	25	3.15%
5	Undetermined	04	01	05	0.63%
6	Pending report till Chemical analysis.	34	20	54	6.79%
Total		575	220	795	100

Table 05: Distribution of unnatural deaths by manner of death Accident 57.48%, including RTA, fall from height, burns, drowning, snakebite, electrocution, animal attack and lightning strike, suicide 24.40%, homicide 3.15% and natural causes of death 7.55% each.

Discussion

Unnatural death is one of the indicators of social and mental health. Crime has never left human society since its appearance on this earth. Unnatural deaths include deaths caused by a person's negligent acts, criminal intentions, or planned omissions, as well as deaths where there is no illegal intent but death is caused by an accident or mishap.

In our study, unnatural deaths were higher in men than in women. The study is similar to the studies of M. Deepak et al.⁹, Dr. Awdhesh Kumar et al.¹⁰, Zahid Hussain Khalil et al.¹¹, AB Zarami et al.¹², and Anjanamma T et al.¹³. Men are mostly involved in socio-political disputes and crimes due to their work culture, and they take many risks leading to unnatural deaths.

The age distribution of unnatural deaths is predominantly in the age group 21–30 years, followed by 31–40 years. The study is similar to those of M. Deepak et al.⁹, Dr. Awdhesh Kumar et al.¹⁰, and AB Zarami et al.¹² and differs from those of Anjanamma T et al.¹³ This preponderance of the younger age group could be due to the stress factors one is exposed to at this age. This is the age when individuals are approaching the crucial moments of their lives, such as employment, marriage, and family responsibilities, which makes them vulnerable to various hazards of life. The difference from the study of Anjanamma T et al.¹³ could be due to the fact that after 30, life becomes calmer and brings less stress than in the 31–40 age group in our region.

Our study shows that most unnatural deaths occur in the summer region, followed by the rainy season, similar to the studies of M. Deepak et al.⁹ and Dr. Awdhesh Kumar et al.¹⁰ In our region, most family members are free from work and go on holiday or to a wedding party.

In our study, the most common cause of unnatural death was head injury, followed by polytrauma. Both injuries mostly contribute to traffic accidents. The study is similar to the studies of Deepak M. et al.⁹, Dr. Awdhesh Kumar et al.¹⁰, and differs from the studies of Zahid Hussain Khalil et al.¹¹, AB Zarami et al.¹² This difference is mainly due to the fact that the study was conducted outside of India, and law and order prevail in their own country. In India, the studies are similar due to the general problem of traffic congestion.

In our study of the nature of death, most unnatural deaths fall under accidental death, followed by suicide. Studies of M. Deepak et al.⁹, Anjanamma T et al.¹³ differs from a Study of Zahid Hussain Khalil et al.¹¹ due to the law-and-order situation in the country. A similar study of fatalities is attributed to poor enforcement of traffic rules and regulations, drunk driving, risk-taking behavior by teenagers and other poor road conditions.

Conclusion

The law-and-order situation in a particular jurisdiction is the main reason for planning such studies for situational analysis of unnatural deaths in the study region to compare with the national and global statistics and to find possible remedial measures to minimize the incidence of unnatural deaths. The predominant sex, predominant age group, causes and manner of unnatural deaths in our study are more or less similar to the pattern found in most of the national studies.

It can be concluded from the study that most victims of unnatural deaths are men who have died in traffic accidents.

These are mostly younger people who are losing their economic power due to the loss of the productive population.

These deaths can be prevented through strict enforcement of traffic rules and national health programs.

Suicide poisoning needs to be addressed early through government policies. Education and encouragement of the leaders of the society will reduce unnatural deaths.

Acknowledgments: The author would like to thank the faculty and staff of the Department of Forensic Medicine, RSDKS Government Medical College, Ambikapur, Sarguja for their valuable support and extensive help in data collection of the autopsied cases.

Conflict of interest: None

Source of funding: This research was not financially supported by any funding organization.

Ethical approval: The present study was approved by the Institutional Ethical Committee of the RSDKS Government Medical College, Ambikapur, Sarguja. All information was considered by the Medical Ethics Committee.

Reference

1. Bardale Rajesh. Principles of Forensic medicine & toxicology. 2nd ed. New Delhi: Jaypee the health sciences publisher; 2017.p. 130.
2. Mukherjee's JB, edited by Karmakar RN. Forensic medicine and toxicology. 4th ed. Kolkata: Academic publishers; 2011. p. 219.
3. Narayan Reddy KS, Murty OP. The Essentials of Forensic Medicine & Toxicology. 35th ed. New Delhi: Jaypee brothers' medical publishers; 2022.p. 99.
4. Segen medical dictionary (2012): Available from <https://medical.dictionnaire.com/unnatural-death>. Accessed on 24 August 2019.
5. Vij K. Textbook of forensic medicine and toxicology. 5th ed. New Delhi: Elsevier; 2011.p.77.
6. Danis, G G. Mind your manner's part 1. History of death certification and manner of death classification. AMJ forensic Med Pathol. 1997; 18:219-223.
7. Seleye-Fubara, D. Pathology of firearm mortalities in the Niger Delta region of Nigeria: a study of 136 consecutive autopsies. Med. Sci. Law. 2009; 49(1): 622-26.
8. Ghulam Mustafa Yousfani and Muhammad Umer Memon. Spectrum of unnatural deaths in Hyderabad: An Autopsy based study. Journal of Dow University of Health Sciences, Karachi. 2010; 4(2):14041-14044.
9. M. Deepak, Bharath Shetty, Francis N.P. Monteiro, Karen Prajwal Castelino, Arun Pinchu Xavier, Tanush Shetty. Spectrum of unnatural deaths: autopsies conducted at A. J. Institute of medical sciences & research centre, Mangalore. IP International Journal of Forensic Medicine and Toxicological Sciences. 2019;4(4):111-117.
10. Dr. Awdhesh Kumar, Dr. Surender Kumar Pondey and Dr. Singh, T. B. A Descriptive Study on Trend of Unnatural Deaths in Varanasi, India. International Journal of Current Research. 2015; 7 (3):14041-14044,
11. Zahid Hussain Khalil, Muhammad Naeem, Muhammad Adil, Muhammad Zia ul Islam Khan, Syed Hussain Abbas, Faqirullah. Analysis of autopsy record of unnatural deaths in Peshawar district. JPML. 2013; 27 (4): 392-396.
12. AB Zarami, A Kabir, SS El-Buba, UH Pindiga. Patterns of Unnatural Deaths during Insurgency in Maiduguri, Borno State, North-Eastern Nigeria: A Ten-Year Retrospective Review. Borno Medical Journal. 2021; 18 (1): 1-7.
13. Anjanamma T, Vijaya NM, Vijayanath V, Praveen Athani. A Study of Unnatural death at MVJ Medical College and Research Hospital. Indian Journal of Forensic and Community Medicine. 2016;3(2):138-141