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## RESEARCH ARTICLE

### A DESCRIPTIVE STUDY ON TREND OF UNNATURAL DEATHS IN VARANASI, INDIA

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#### ABSTRACT

Thanatology deals with death in all aspects. Section 46 IPC death denotes death of a human being unless the contrary appears from the context. The cause of death is the disease or injury responsible for starting the sequence of events, which are brief or prolonged and which produce death. Present study is carried out at forensic medicine department, Institute of Medical Sciences, Banaras Hindu University, Varanasi. Relevant information and subjective data like age, sex, marital status and manner of death have been collected from medico legal autopsy register. Data are analyzed retrospective for periods of five years from 2009 to 2013. Aims of the present study are to find out to know how pattern of unnatural deaths affect incidence, age, sex, marital status, religion, manner of death in community and to out find remedial measures to bring down the incidence. Road traffic accident 38.9% contributes most common. 21 to 30 year ages were most common age group affected 28.7%. Male were outnumber 70.5 %, female 29.4%, married people 21.6%, Hindu were major cause 84.9%, accidental 45.1. Strict implementation of traffic rules regulation, with special attention to be paid to: Drunken drivers, Unskilled or semiskilled drivers.

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#### INTRODUCTION

Thanatology deals with death in all aspects. Section 46 IPC death denotes death of a human being unless the contrary appears from the context. Registration of birth and deaths act section 2(b) defines death as permanent disappearance of all evidence of life at any time after live birth has taken place r 123. The cause of death is the disease or injury responsible for starting the sequence of events, which are brief or prolonged and which produce death. Classification of the cause of death according to the autopsy finding, the cause of death natural cause, unnatural cause and obscure cause. Natural cause- of death where a lesion is found at autopsy which is incompatible with life and which is known to cause of death (Narayan Reddy, 2012). Unnatural death- is a category used by coroners and vital statistics specialists for classifying all human deaths not properly describable as death by natural causes. Hence it would include events such accident, homicide, suicide (Forensic Medicine for Lawyers). A death caused by external causes—e.g., injury or poisoning—which includes death due to intentional injury, such as homicide or suicide, and death caused by unintentional injury in an accidental manner (Heart murder, Murder, C F Natural death).

Unnatural death forensic medicine point of view a death that is caused by external causes—injury or poisoning which includes death due to intentional injury such as homicide or suicide, and death caused by unintentional injury in an accidental manner (McGraw, 2002). Unexplained or unnatural death if the death was unexpected happened in unusual circumstances or in a public place or if doctors are uncertain about the actual cause of death, the coroner is likely to be involved (<http://www.access-legal.co.uk/services/bereaved-services/Unexplained-or-unnatural-death-4685.htm#ixzz3H2FkU7fO>). Obscure cause- where no lesion is found at autopsy which is incompatible with life if it is of a minimal or indefinite nature. As on the basis of autopsy finding different cause of death give rise to various trend of unnatural death so need to a descriptive study on trend of unnatural death in Varanasi (Narayan Reddy, 2012).

#### Aim of the study

Aims of present study are to find out to know how pattern of unnatural deaths affect incidence, age, sex, marital status, religion, manner of death in community and to out find remedial measures to bring down the incidence.

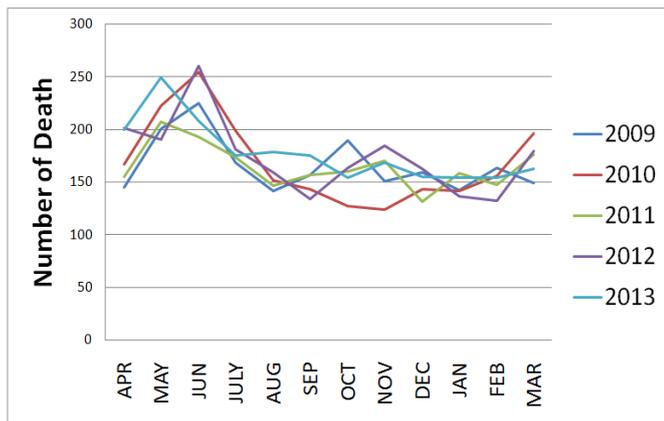
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**MATERIAL AND METHODS**

Present study is carried out at forensic medicine department, Institute of Medical Sciences, Banaras Hindu University, Varanasi. Relevant information and subjective data like age, sex, habitat, marital status and manner of death have been collected from medico legal autopsy register. Data are analyzed retrospectively for periods of five years from 2009 to 2013. Cases were included in a descriptive study on trend of unnatural deaths in Varanasi, India on the basis of confirmation by investigating officer and corroborative finding at medico legal examination.

**OBSERVATION AND RESULTS**

**Chart 1:** Show that year and month wise distribution of unnatural death. **Table 1:** Show that distribution of unnatural death description, road traffic accident 38.9% contribute most common cause followed by burn injury 18.7%, Poisoning case 8.8% etc. **Table 2:** Age and gender wise distribution of unnatural deaths description showed that 21 to 30 year age were most common age group affected 28.7% followed by 31 to 40 year 19.8% and more than 70 year old age were least affected.



**Chart 1. Year and month wise distribution of unnatural**

**Table 1. Cause of death wise distribution of unnatural deaths**

Cause of death	Total No. of victims	% of total victims
Burn	1911	18.7
electrocution	354	3.5
Fall from height	147	1.4
Firearm injury	127	1.2
Hanging	153	1.5
Heat stroke	457	4.5
Hypothermia	8	0.1
Infected wound	14	0.1
Lightning	14	0.1
Natural	1210	11.9
Neck injury	26	0.3
Poisoning	896	8.8
Still born	25	0.8
Railway accident	687	6.7
Road traffic accident	3963	38.9
Strangulation	24	0.2
Suffocation	119	1.2
Total	10195	100.0

**Table 2. Age and gender wise distribution of unnatural deaths**

Age group (year)	Male (%)	Female (%)	Total (%)
0-10	209(54.6)	174(45.4)	383(3.8)
11-20	788(56.7)	602(43.3)	1390(13.6)
21-30	1812(61.9)	1117(38.1)	2929(28.7)
31-40	1529(75.8)	487(24.2)	2016(19.8)
41-50	1220(83.3)	245(16.7)	1465(14.4)
51-60	913(84.1)	172(16.7)	1085(10.6)
61-70	525(78.2)	146(21.8)	671(6.6)
>70	198(77.3)	58(22.7)	256(2.5)
Total	7194(70.6)	3001(29.4)	10195(100)

**Table 3:** Gender wise distribution of unnatural deaths showed that male were outnumbered 70.5 %, female 29.4% and unknown victims 0.1 %. **Table 4:** Marital status wise distribution of unnatural death married people 21.6%. Unmarried group 8.8% and most of the cases were unknown 69.6%. **Table 5:** According to religions Hindu were major cause 84.9% followed by Muslim 2.9% and Christian 0.2%. **Table 6:** Distribution of unnatural deaths according to manner of death accidental 45.1, homicidal 5.1, suicidal 5.2 and natural cause of death were 12.0% respectively. **Table 7:** Seasonal variation wise distribution of unnatural death major cases in summer season 38.6% followed by rainy season 31.7% and in winter season 30.0%.

**Table 3. Gender wise distribution of unnatural deaths**

S. No.	Gender	Total No. of victims	% of Total No. of victims
1.	Male	7194	70.5
2.	Female	2993	29.4
3.	Unknown	8	0.1

**Table 4. Marital status wise distribution of unnatural deaths**

Marital status	Total no. deaths	% Total no. deaths
Married	2207	21.6
Unmarried	894	8.8
Unknown	7094	69.6

**Table 5. Religions wise distribution of unnatural deaths**

Religions	Total No. of deaths	% Total No. of deaths
Hindu	8657	84.9
Muslim	294	2.9
Christian	17	0.2

**Table 6. Manner of death distribution of unnatural deaths**

Manner of death	Total No. of victim	% of victim
Accidental	4598	45.1
Homicidal	524	5.1
Natural	1224	12.0
Suicidal	534	5.2
Unknown	3315	32.6
Total	10195	100.0

**Table 7. Distribution of unnatural deaths according to seasonal variation**

Season	Total No. of cases	% of cases
Summer (March-June)	3936	38.6%
Rainy (July-October)	3229	31.8%
Winter (Nov.-February)	3030	29.7%
Total	10195	100.00%

## DISCUSSION

### Prevalence unnatural death

Total unnatural death 88.1% of total autopsy and % in relation to population of Varanasi male and female (3676841 according to census 2011) were 0.5%. Unnatural death is one of the major indicators of the level of health status of community. Responsibility for prevention of unnatural deaths in our society does not rest only on the law enforcement. Public health and other human service agencies must assist in preventing unnatural deaths as they have done to prevent other major causes of morbidity and mortality. Other study (Bansude *et al.*, 2012) finds that unnatural death 85.5%. As just observed, most countries have a legal procedure for investigating deaths which are not obvious natural disease (Park, 2009).

### Cause of death

Show that distribution of unnatural death pattern road traffic accident 38.9% contributes major cause of death which coincides with the 36% of study conducted in Chandigarh, northern India (Sharma *et al.*, 2004). In a study conducted in cases of deaths due to road traffic accidents, Govekar *et al.* (2009) observed comparable findings. They observed that in road traffic accident deaths are more common. The search for acceleration and speed has led to the development of high velocity motorized vehicles which have become integral part of new system of our modern life. Kachare *et al.* (2003) in their study observed that burn (29.41%) were the commonest cause of death.

### Age

According to age wise distribution of unnatural death that most common age group 21 to 30 year was most common age group affected 28.7%. Public health departments, public authorities and other human service agencies also must assist with honest effort in searching the primary cause of unnatural deaths and their prevention. Other study also find about similar result (Gannur Dayanand *et al.*, 2012). Other study (Belayet Hossain Khan *et al.*, 2011) most of the cases were between 21-40 years.

### Sex

In present study sex wise distribution of unnatural death pattern showing that male were outnumber 70.5% female 29.4%. Other study (Bansude *et al.*, 2012) also find about similar result that male outnumber to female about 1.68 times.

### Religions

In our study Hindu were major contribution 84.9% followed by Muslim 2.9% and Christian 0.2%. In other study Hindus were more 87.26% than Muslims 12.74% i.e. ratio being 6.84:1 (Bansude *et al.*, 2012). This difference is due to difference in religions population in Varanasi area.

### Marital status

In our study we find that marital status wise distribution of unnatural death showed that married people 21.6%. Unmarried

group 8.8%, but most of the cases were unknown 69.6%. Other study also find that married 80.06% were outnumber unmarried 19.94% (Bansude *et al.*, 2012).

### Seasonal variation

In our study seasonal variation wise distribution of unnatural deaths showed that major cases in summer season 38.6% followed by rainy season 31.7% and in winter season 29.7%.

### Conclusion

- Strict implementation of traffic rules regulation, with special attention to be paid to: Drunken drivers, Unskilled or semiskilled drivers.
- Various socio-economic factors responsible for the high incidence of suicidal poisoning need a practical and early redressed on the Govt.-front, by properly and honestly framing the policies and implementing the same in such a manner that their benefits reach the needy. The N.G.Os and Social Organizations can contribute their bit by building a satisfactory interpersonal relationship between the young and the elders in the society.
- The real emphasis about education and encouragement of moral values of the leaders of the society will reduce the unnatural deaths due to homicidal violence.

### Future scope

Based upon the present study following point may need in future planning regarding prevention of unnatural deaths pattern:-To plan effective preventive strategies regarding unnatural death especially road traffic accident as it was most common cause of death.

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### Conflict of interest: Nil

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### Ethical clearance

The present study was approved by "Institutional Ethical Committee" of Institute of Medical Sciences, Banaras Hindu University, Varanasi. All the information has been taken under consideration of medical ethical committee.

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