

## Profile of Unnatural Deaths in Bengaluru North – An Autopsy Based Study.

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### Abstract

A total of 433 unnatural deaths were studied during the period January 2014 to December 2014 at the department of Forensic medicine, Dr.B.R.Ambedkar medical college, Bengaluru. Out of 637 postmortem cases, 433 (68%) were unnatural deaths. The most common age group affected was 21 – 30 years involving 151 (34.9%) cases. Male to female ratio was 2.04:1 with 291 (67.2%) males and 142 (32.8%) females. Suicidal deaths accounted for 251 (58%) cases, accidental deaths - 146 (33.7%) cases and alleged homicidal deaths – 36 (8.3%) cases. As per this study, hanging (46.4%) was the most common cause of death followed by fall from height (12.2%), poisoning (10.4%), drowning (5.5%), Road traffic accident (5%), burns (4.6%), assaults (3.7%). The least number of cases were due to firearm deaths (0.5%).

**Key words** Unnatural deaths, Suicide, Accidental, Homicide, Hanging, Fall from height.

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### Introduction:

Section 46 IPC: Death denotes death of a human being unless the contrary appears from the context. Registration of Births and Deaths Act, Sec.2(b) defines death as permanent disappearance of all evidence of life at any time after livebirth has taken place.<sup>1</sup> Under section 174 of the code of criminal procedure, 1973, the unnatural death defined as that; (a) A person has committed suicide or (b) He has been killed by another or (c) He has been killed by an animal or (d) By a machinery or (e) An accident or (f) The person has died under circumstances raising a reasonable suspicion that some other person has committed an offence.<sup>2</sup> These deaths may be accidental, suicidal and homicidal or remain undetermined.<sup>1</sup>

Increasing population, changing life style, poor socio-economic conditions, changing transport and technology and the increasing unrest in society, all play a role in the increase in the number of crimes and unnatural deaths.<sup>3</sup>

As such unnatural deaths are the indicators of social and mental health of the society. Periodic publication of the statistical data is very much useful as it will give though not holistic but important information regarding trends of unnatural deaths, which can be used by the authorities to devise a strategy to prevent further losses.<sup>4</sup> So the present study was carried out to determine epidemiological aspects of unnatural deaths.

### Materials and Methods

This prospective study was carried out in the department of Forensic medicine and Toxicology, Dr. B.R. Ambedkar medical college, Bengaluru during the period January 2014 to December 2014. The material for the study comprised of 433 unnatural deaths autopsied at the mortuary during the study period. A standardized proforma specially designed for this purpose was used and filled in each case regarding the history given by relatives, information obtained during inquest and post-mortem findings. Blood and viscera were sent to chemical analysis to establish the poison consumed in suspected cases of poisoning. The results obtained was compared with similar type of the work carried out by other authors and concluded.

### Results and Discussion:

In the present study the number of unnatural

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deaths that were brought to the mortuary of the department for medico-legal autopsy were 433 (68%) out of total 637 postmortems done during the study period. This finding is comparable with incidences – 61.4% and 74.69% noted in other studies.<sup>5,6</sup> But the results of present study are quite low when compared to 96% unnatural deaths among all medico-legal autopsies,<sup>3</sup> 90.93% and 81.16%.<sup>7,4</sup>

Among 433 cases of unnatural deaths, 291 (67.2%) cases were male and 142 (32.8%) cases were of female sex with male to female ratio of 2.04: 1 as shown in Table 3. The sex wise distribution observed in the study is similar to that found by NS Dingre. et al,<sup>4</sup> Archana Kaul. et al<sup>7</sup> and G.S.R.K.G.Ranga Rao. et al.<sup>8</sup>

In the present study, maximum cases (34.9%) were seen in age group of 21 – 30 years followed by 21.7% cases in 31 – 40 years age group, as depicted in Table 1. These age groups are the active and productive sections for the society and are thus susceptible to incidences resulting in untimely death.<sup>3</sup> These results are similar to various other studies.<sup>(3,4,8,9,10,11)</sup> However, this is in contrast to another study which reported highest incidence between 51 – 60 years.<sup>12</sup> 3.69% cases were seen in 0 – 10 years' age group and 2.07% cases in >70 years' age group. As the age advanced, the number of cases went on decreasing in number.

**Table 1: Distribution of the unnatural deaths according to age groups.**

Age group (Years)	Number of cases
0-10	16 ( 3.7%)
11-20	65 (15%)
21-30	151 (34.9%)
31-40	94 (21.7%)
41-50	51 (11.8%)
51-60	31 ( 7.1%)
61-70	16 ( 3.7%)
>70	9 ( 2.07%)
Total	433 (100%)

In the present study, the manner of death was concluded based on history, circumstantial evidences and post-mortem findings. In about

58% cases of the present study, the unnatural deaths were suicidal in nature, majority of which were hanging followed by poisoning, burns, fall from height, drowning and firearm deaths (Table 2). 33.7% deaths were accidental in nature and about 8.3% due to homicides. Our findings differ from the study conducted at Rangaraya medical college, Kakinada, where accidents were 567 (75%), suicides – 165 (22%) and homicides accounted for 17 (2%) cases.<sup>8</sup> In another study conducted at Pekan baru, Indonesia, homicide (65%) is the predominant manner of death rather than accident (28.3%) and suicide (6.7%).<sup>13</sup>

The pattern of accidental deaths in our study were, fall from height – 48 (32.9%), RTA 22 (15%), drowning 20 (13.6%), electrocution 15 (10.3%), burns 12 (8.2%), poisoning 11 (7.5%), wall collapse 8 (5.5%), traumatic asphyxia 4 (2.7%), hanging and railway injuries – 3 each (2%), as shown in Table 2. Out of 146 cases of accidental deaths, 117 were males and 29 were females.

Fall from height was the most common type among accidental deaths, where out of 48 cases, majority were males – 45 (38.5%) and females accounted for 3 cases (10.3%). There were 20 (17%) cases of males and 2 (6.9%) cases of females among RTA's. In drowning, 16 (13.7%) were males and 4 (13.8%) were females. There were 14 (11.9%) cases of males and 1 (3.4%) case of female in deaths due to electrocution. Out of 12 deaths due to burns, males were 4 (3.4%) and females were 8 (27.6%). There were 4 (3.4%) males and 7 (24.1%) females in deaths due to poisoning. Whereas in a study conducted at SMS hospital, Jaipur,<sup>3</sup> majority of the accidental deaths occurred due to road traffic accidents (59.2%), followed by burns (17.1%), falls from height (8.9%), poisoning (4.5%), electrocution (4.2%), train accidents (2.7%), animal injuries (0.5%), drowning (0.3%) and firearm related accidents (0.2%).

In the present study, 251 (58%) cases were due to suicide. Suicides were more in the age group of 21 – 30 years in males and females. Not achieving goals, lack of job satisfaction, love failure provokes this age group persons to

commit suicide. 153 males and 98 females ended their life by different methods. Preferred ways of suicide were hanging 198 (78.9%) – Males 125(81.7%) and females 73(74.5%); Poisoning 34 (13.5%) – Males 21(13.7%) and females 13(13.3%); Burns 8(3.2%) – Males 2(1.3%) and females 6(6.1%); Fall from height 5(1.99%) – Male 1(0.6%) and females 4(4%); Drowning 4(1.6%) – Males 2(1.3%) and females 2(2%); Firearm deaths 2(0.8%) – Males 2(1.3%). These are consistent with observations made by other authors,<sup>15,16,17</sup> where hanging was the most common method of self-destruction followed by either poisoning or drowning and burns. Our findings differ from the study conducted at KLE's hospital and MRC, Belgaum,<sup>14</sup> the maximum number of suicidal deaths occurred as a result of self-administration of poisons (58.33%), followed by burns (16.67%), fall from height (16.67%) and hanging (8.33%).

Homicidal deaths accounted for 36(8.3%) cases in which 24(5.5%) were male and rest 12(2.8%) were female. Lower incidences of homicidal death were reported from Belgaum (2.5%),<sup>14</sup> Jaipur (3%)<sup>3</sup> and Kakinada (2%).<sup>8</sup> Higher incidence of homicidal death were observed in a study conducted at Allahabad (10.22%).<sup>7</sup>

Majority of the homicidal deaths were due to assaults – sharp force injury(44.4%) followed by head injury(33.3%), smothering (11.1%) and ligature strangulation (11.1%), as depicted in Table 2. However, in a study conducted at Jaipur, homicidal deaths were majorly due to episodes of assault (64.9%) followed by burns (17%), poisoning (7.5%), gunshot injuries (5.3%), strangulation (2.1%), fall from height (2.1%) and railway track injuries(1.1%)<sup>3</sup>.

### Conclusion:

In our study, most of the victims were young, aged 21 to 30 years. Most common cause of death was hanging. It was observed that the most common manner of death was suicidal followed by accidental and least homicidal type. Suicidal deaths are major contributors and victims of young age group are affected more, although no age group is completely

immune. Suicidal tendencies and suicide are still major preventable causes of such deaths.

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**Table 2: Distribution of subjects according to cause and manner of death.**

Cause of death	Accidental	Suicidal	Homicidal	Total
Hanging	03 (2%)	198 (78.9%)	00	201 (46.4%)
Fall from height	48 (32.9%)	05 (1.99%)	00	53 (12.2%)
Poisoning	11 (7.5%)	34 (13.5%)	00	45 (10.4%)
Drowning	20 (13.6%)	04 (1.6%)	00	24 (5.5%)
RTA	22 (15%)	00	00	22(5%)
Burns	12 (8.2%)	08 (3.2%)	00	20 (4.6%)
Electrocution	15 (10.3%)	00	00	15 (3.5%)
Head injury	00	00	12 (33.3%)	12 (2.8%)
Railway injuries	03(2%)	00	00	03 (0.7%)
Firearm deaths	00	02 (0.8%)	00	02 (0.5%)
Traumatic asphyxia	04 (2.7%)	00	00	04 (0.9%)
Wall collapse injuries	08 (5.5%)	00	00	08 (1.8%)
Ligature strangulation	00	00	04 (11.1%)	04 (0.9%)
Smothering	00	00	04 (11.1%)	04 (0.9%)
Assaults – Sharp force	00	00	16 (44.4%)	16 (3.7%)
Total	146 (33.7%)	251 (58%)	36 (8.3%)	433 (100%)

**Table 3: Distribution of cause of death according to sex.**

<b>Cause of death</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
Hanging	125	76	201
Fall from height	46	07	53
Poisoning	25	20	45
Drowning	18	06	24
RTA	20	02	22
Burns	06	14	20
Electrocution	14	01	15
Head injury	11	01	12
Railway injuries	03	00	03
Firearm deaths	02	00	02
Traumatic asphyxia	04	00	04
Wall collapse injuries	04	04	08
Ligature strangulation	02	02	04
Smothering	01	03	04
Assaults – Sharp force	10	06	16
Total	291 (67.2%)	142 (32.8%)	433 (100%)