



## AUTOPSY STUDY OF MEDICOLEGAL AND SOCIO-DEMOGRAPHIC ASPECTS OF SUICIDAL DEATHS IN CENTRAL INDIA

### Forensic Medicine

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### ABSTRACT

Suicide is a type of deliberate self-harm and is defined as a human act of self-intentioned and self-inflicted cessation of life. The number of suicides recently increased during the COVID 19 pandemic. This study was conducted from January 2021 to November 2022. The aim of this study was to analyze the various method of suicide and analyze the various risk factors, precipitating factor for suicide and also to analyze the socio-demographic and medico legal aspect of suicidal death. This study was carried out in the Dept of Forensic Medicine, Govt medical college, Nagpur on the medicolegal autopsy cases of a total of 384 cases. Data collection was done by standard proforma from information collected from police investigation, autopsy reports and also from information from relatives. Statistical analysis done on the collected data to find the summary. From the present study it is concluded that most of the suicides are unemployed urban Hindu males in third and fourth decades of life. Most commonly used method is hanging followed by poisoning and were due to economic problem followed by domestic quarrel.

### KEYWORDS

Suicide, Hanging, Covid 19, Deaths.

### INTRODUCTION

Suicide is derived from the Latin word "sui" and "caedere" meaning "to kill oneself". If successful, it is a fatal act that represents the persons' wish to die.<sup>(1)</sup> Suicide is considered stigma on the family by the society. Where all the living organisms on this earth fight for survival and existence, what really drives the person to take such a violent, self-destructive step considering the trauma family members face, suicide is a major public health problem and a drain on our economy with loss of useful reproductive human resources.<sup>(2)</sup>

As per National crime record bureau data, the total of 1,53,052 suicides were reported in country during 2020 showing an increase of 10% in comparison to 2019. Out of all the suicide in India, Maharashtra accounts for 13%. This indicates that Maharashtra has maximum suicidal load all over the India. The means adopted for committing suicides varies from easily available and less painful such as hanging, poisoning and drowning to more painful means such as self-inflicted injuries, burning and shooting etc. In the year 2020 out of total suicide, hanging 57.8%, poisoning 25.0%, Fire/self-Immolation 3.0% and Drowning 5.2% were the prominent means of committing suicides. Majority of suicides were reported in Maharashtra (19,909) followed by 16,883 suicides in Tamil Nadu.

Various social, economic and psychological factors contribute to the occurrence of suicide along with criminal cause. Apart from above mentioned factors recent life style modernization factors such as social media, performance pressure, failure in love, health stigma, conflict in family, urbanization and unemployment are the various factors responsible for suicide. The problem of suicide has thus become a salient yet unrecognized pandemic.<sup>(3)</sup>

### OBJECTIVE

1. To analyze the various methods and precipitating factors for suicide.
2. To analyze the risk factors and medico-legal aspects of suicidal death.
3. To analyze the socio-demographic characteristics of suicidal cases.
4. To suggest the preventive measures and whether some of it are avoidable

### MATERIAL AND METHODS

The study was carried out in the Department of Forensic Medicine Government medical college, Nagpur during a period of January 2021 to November 2022.

### Study Subject

The present study was carried out on suicidal cases brought for medico-legal post mortem examination of a total 384 cases of suicides.

### Data Collection

Information required was collected from inquest papers, autopsy report, information from relative and police.

The data were analysed in relation to age, sex, marital status, religion, socio-economic status, education, reason for committing suicide, method used for committing suicide and psychiatric illness.

### Inclusion Criteria

All the dead bodies brought to department of forensic medicine for medico- legal autopsy with history of suicidal death.

### Exclusion Criteria

1. Unknown, unclaimed dead bodies.
2. Decomposed dead bodies
3. Cases where the manner of death is doubtful.
4. Cases where the proper history about all the assessing parameters taken in study could not be elicited from investigating officers and relatives.

### OBSERVATION AND RESULTS

From the present study the following points are deduced. Maximum number of cases was in young adult (20-40 years) constituting 57.55% cases followed by adult (41-64 years) accounting 31% cases. Not a single case of suicide was found in children (0-12 years). Our study is similar with Kadu SS et al<sup>(7)</sup>, Kinyanda E et al<sup>(8)</sup> and Momonchand et al<sup>(9)</sup> studies. See (Table 01)

**Table No: 01 Suicidal Deaths With Respect To Age.**

| Age                 | Sex  |       |        |       | Total | %     |
|---------------------|------|-------|--------|-------|-------|-------|
|                     | Male | %     | Female | %     |       |       |
| Child (0-12)        | 0    | 0     | 0      | 0     | 0     | 0     |
| Adolescent (13-19)  | 18   | 4.69  | 7      | 1.82  | 25    | 6.51  |
| Young adult (20-40) | 155  | 40.36 | 66     | 17.19 | 221   | 57.55 |
| Adult (41-64)       | 92   | 23.96 | 27     | 7.04  | 119   | 31    |
| Older 65 or above   | 15   | 3.90  | 4      | 1.04  | 19    | 4.94  |
| Total               | 280  | 72.91 | 104    | 27.09 | 384   | 100   |

**Table No: 02 Suicidal Deaths With Respect To Sex.**

| Sex    | Number of cases | % of cases |
|--------|-----------------|------------|
| Male   | 280             | 72.91      |
| Female | 104             | 27.09      |
| Total  | 384             | 100        |

Males constitute 72.91% cases whereas 27.09% cases were females. Males nearly Three times outnumbered the females. Our study is similar with Nigam M et al<sup>(10)</sup>, Chandrashekhar TN<sup>(11)</sup> and Deborah J

protect<sup>(12)</sup> studies. (Table 02)

Urban victims constituting 74.74% cases outnumbered rural 25.26% cases. Our study is similar with Tanna JA et al<sup>(14)</sup> study. (Table 03)

**Table No: 03 Suicidal Deaths As Per Locality**

|       | Male  |       | Female |       | Total |       |
|-------|-------|-------|--------|-------|-------|-------|
|       | Cases | %     | Cases  | %     | Cases | %     |
| Urban | 211   | 54.95 | 76     | 19.79 | 287   | 74.74 |
| Rural | 69    | 17.97 | 28     | 7.29  | 97    | 25.26 |
| Total | 280   | 72.92 | 104    | 27.08 | 384   | 100   |

Majority were married (64.85%) followed by unmarried (34.11%) and widow/widower (1.04%). Our study is similar with Bardale et al<sup>(17)</sup>, Sharma BR et al<sup>(18)</sup> and Gururaj G et al<sup>(15)</sup> studies. (Table 04)

**Table No: 04 Suicidal Deaths With Respect To Marital Status.**

| Social class | Male  |       | Female |       | Total |       |
|--------------|-------|-------|--------|-------|-------|-------|
|              | Cases | %     | Cases  | %     | Cases | %     |
| Married      | 176   | 45.83 | 73     | 19.02 | 249   | 64.85 |
| Unmarried    | 103   | 26.82 | 28     | 7.29  | 131   | 34.11 |
| Widow        | 1     | 0.26  | 3      | 0.78  | 4     | 1.04  |
| Total        | 280   | 72.91 | 104    | 27.09 | 384   | 100   |

Majority were belonging to upper lower class which constituting 47.13% cases followed by lower class 19.27% cases and least were in upper class 7.81% cases. Our study is similar with Kadu SS et al<sup>(7)</sup> and Auer Med<sup>(16)</sup> studies. see (Table 05)

**Table No: 05 Suicidal Deaths As Per Socioeconomic Status**

| Social class | Male  |       | Female |       | Total |       |
|--------------|-------|-------|--------|-------|-------|-------|
|              | Cases | %     | Cases  | %     | Cases | %     |
| Lower        | 46    | 11.98 | 28     | 7.29  | 74    | 19.27 |
| Upper lower  | 125   | 32.55 | 56     | 14.58 | 181   | 47.13 |
| Middle       | 40    | 10.42 | 7      | 1.83  | 47    | 12.25 |
| Upper middle | 44    | 11.46 | 8      | 2.08  | 52    | 13.54 |
| Upper        | 25    | 6.51  | 5      | 1.30  | 30    | 7.81  |
| Total        | 280   | 72.92 | 104    | 27.08 | 384   | 100   |

Majority of suicidal deaths were due to Economic problems accounting (24.74%) cases followed by domestic quarrel (19.79%) cases. Our study is similar with Vikram Palimar et al<sup>(13)</sup> study. see (Table 06)

**Table No: 06 Suicidal Deaths With Respect To Cause Of Suicide**

| Causes              | Male  |       | Female |       | Total |       |
|---------------------|-------|-------|--------|-------|-------|-------|
|                     | Cases | %     | Cases  | %     | Cases | %     |
| Domestic quarrel    | 34    | 8.85  | 42     | 10.94 | 76    | 19.79 |
| Unemployment        | 52    | 13.54 | 4      | 1.04  | 56    | 14.58 |
| Economic problems   | 92    | 23.96 | 3      | 0.78  | 95    | 24.74 |
| Psychiatric illness | 16    | 4.17  | 12     | 3.13  | 28    | 7.30  |
| Failure in love     | 20    | 5.20  | 7      | 1.82  | 27    | 7.02  |
| Exam failure        | 13    | 3.39  | 4      | 1.04  | 17    | 4.43  |
| Chronic illness     | 43    | 11.20 | 14     | 3.65  | 57    | 14.85 |
| Not known           | 10    | 2.60  | 0      | 0     | 10    | 2.60  |
| Dowry related       | 0     | 0     | 18     | 4.69  | 18    | 4.69  |
| Total               | 280   | 72.91 | 104    | 27.09 | 384   | 100   |

Majority of victims were educated up to 8-12 standard i.e., 38.8% cases followed by Graduates i.e. 30.74% cases and least number of suicidal cases were postgraduates 0.78% cases. Our study is similar with Tanna JA et al<sup>(14)</sup>, Kadu SS et al<sup>(7)</sup> and Gururaj G et al<sup>(15)</sup> studies. see (Table 07)

**Table No: 07 Suicidal Deaths With Respect To Education**

| Education                  | Male  |       | Female |      | Total |       |
|----------------------------|-------|-------|--------|------|-------|-------|
|                            | Cases | %     | Cases  | %    | Cases | %     |
| Illiterate                 | 58    | 15.10 | 12     | 3.13 | 70    | 18.23 |
| Up to 7 <sup>th</sup> std. | 34    | 8.85  | 10     | 2.60 | 44    | 11.45 |

|               |     |       |     |       |     |       |
|---------------|-----|-------|-----|-------|-----|-------|
| 8 – 12 std.   | 94  | 24.48 | 55  | 14.32 | 149 | 38.8  |
| Graduate      | 91  | 23.70 | 27  | 7.04  | 118 | 30.74 |
| Post graduate | 3   | 0.78  | 0   | 0     | 3   | 0.78  |
| Total         | 280 | 72.91 | 104 | 27.09 | 384 | 100   |

Psychiatric illness was present in (7.28%) cases out of which (3.64%) cases were on regular treatment and (3.64%) cases had not taken any treatment. Our study is similar with Jeff Lee C et al<sup>(24)</sup> study. (Table 08)

**Table No: 08 Suicidal Deaths With Respect To Psychiatric Illness**

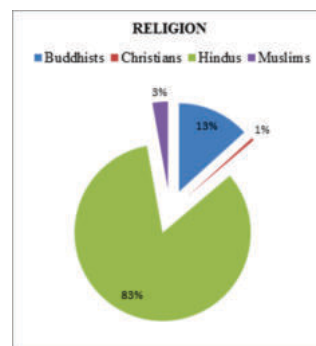
| Psychiatric Illness |                 | Male  |       | Female |       | Total |       |
|---------------------|-----------------|-------|-------|--------|-------|-------|-------|
|                     |                 | cases | %     | cases  | %     | cases | %     |
| Present             | Treatment taken | 9     | 2.34  | 5      | 1.30  | 14    | 3.64  |
|                     | Not taken       | 7     | 1.82  | 7      | 1.82  | 14    | 3.64  |
| Absent              | 165             | 264   | 68.75 | 92     | 23.97 | 356   | 92.72 |
| Total               | 280             | 72.91 | 104   | 27.09  | 384   | 100   |       |

Maximum suicides were unemployed (28.66%) cases, of which 15.89% (i.e., 54.81% out of total of total female) were housewives. Our study is similar with Rane A et al<sup>(6)</sup> study.

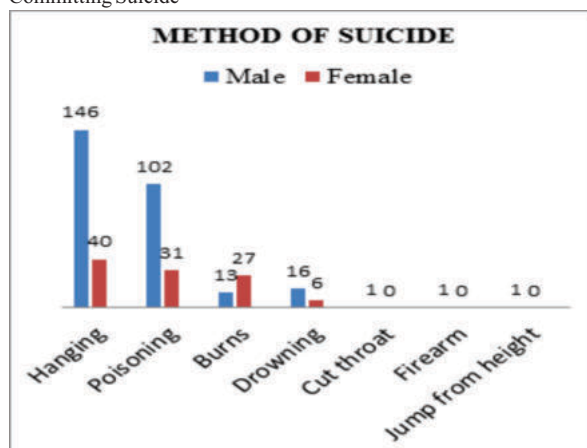
Majority were Hindus 83.33% cases followed by Buddhist 13.28% cases, Muslim 2.87% and Christians 0.52% cases each. Our study is similar with Kadu SS et al<sup>(7)</sup>, Tanna JA et al<sup>(14)</sup>, Vikram Palimar et al<sup>(13)</sup> and Bardale et al<sup>(17)</sup> studies. see (Figure 01)

All the methods of suicides were common in young adult (20-40) years of which hanging (31.51%) cases and poisoning (15.89%) cases.

Overall, most common method for committing suicide was hanging (48.44%) cases followed by poisoning (34.63%) cases. Hanging was most common in male and female. Our study is similar with Elfawal MA et al<sup>(19)</sup>, Kinyanda E et al<sup>(8)</sup>, Mohammed Madadin et al<sup>(21)</sup>, Ponnudurai R et al<sup>(22)</sup>, Sahoo PC et al<sup>(20)</sup> and Soman CR et al<sup>(23)</sup> studies. (Graph 01)



**Graph No: 01 Suicidal Deaths With Respect To Method Of Committing Suicide**



## CONCLUSIONS

The study aimed to analyze and raise awareness about suicide methods, causes, and socio-demographic characteristics. 384 suicidal

cases were studied, with the majority being unemployed urban Hindu males in their third and fourth decades of life, literate up to 12 standard, and of lower socioeconomic status. The most common method was hanging, followed by poisoning, burning, drowning, cut throat, jump from height, and firearm. Economic problems were the leading cause of suicide. It is essential to investigate the reasons for suicide properly to address this major problem. Effective measures for suicide prevention and control needs to be taken in the form of early identification and proper guidance and counselling.

- A National Policy on "Suicide Prevention Programme" can be made to tackle these problems.
- Recording and reporting of suicides must be strengthened in order to define exact magnitude of the problem.
- Micro level analysis of suicides is required to identify high risk population.
- Poverty alleviation programmes to be strengthened.
- Improving quality of life in women and empowerment by reducing gender inequalities.
- Education of the community with regard to proper safety and storage of agrochemicals, hazardous drugs and pesticides at home should be made.

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