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RESEARCH PAPER

Trends of suicidal deaths brought to JNIMS mortuary: a five-year retrospective study

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Background and aims: “suicide” denotes the self-planned and deliberate termination of one’s life. Suicide represents a significant public health problem, and data on its death in a particular geographic area can reflect the social and mental status of the people of that area. The present study aims to analyse the current trends and reasons for suicidal deaths to identify the areas for intervention to prevent them. **Material and method:** A five-year retrospective study was conducted on all the suicidal deaths (120 cases) brought to the Department of Forensic Medicine and Toxicology, JNIMS, Imphal, Manipur, from 1st January 2014 to 31st December 2018. The study was carried out by collecting data from records and was analysed using descriptive statistics. **Results:** Maximum cases of suicidal deaths were seen in males (60%), and the most vulnerable age group was 21-30 years (39.16%). Hanging (62.5%) was the most commonly adopted method of suicide. Most victims belong to the Hindu religion (77.5%), and 71.66% of cases were from rural areas compared to urban areas (28.33%). 67.5% of cases occurred at home, and family disputes (31.66%) were the most typical reason for suicide. **Conclusion:** Knowing the pattern of the methods of suicide and changing trends in the area will help in the early management of such cases and in taking early preventive measures by identifying the risk factors of suicide and establishing free counselling centres.

Keywords: Suicide; hanging; trends; pattern; preventive measures.

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INTRODUCTION

The term “suicide” comes from two words’ sui’-of oneself and ‘cide’-killing of and is used to denote self-planned and deliberate termination of one’s life.¹ According to the World Health Organisation (WHO), every year, around 800,000 people commit suicide worldwide, and India has the highest suicide rate in the South-East Asian region.² Data on suicidal

deaths in a particular geographic area can reflect the social and mental status of the people of that area. Methods of suicide commonly adopted are hanging, poisoning, firearm, drowning, falling from a height, self-inflicted wounds etc. Hanging is almost always suicidal or accidental, the former being the most common.³ Suicide victims often opt for poisons they routinely encounter daily, like pesticides, insecticides, carbolic acids etc. Suicide by firearm is

commonly seen among security personnel. This study was taken to observe the methods and factors leading to suicidal deaths, which will help take preventive measures as suicide has become a globally significant public health problem, including in Manipur.

MATERIALS AND METHODS

The present study was carried out in the Department of Forensic Medicine and Toxicology, Jawaharlal Nehru Institute of Medical Sciences (JNIMS), Imphal, Manipur, India, for five calendar years from 1st January 2014 to 31st December 2018. During the study period, 1010 autopsies were conducted, of which 120 suicidal deaths were noted. Those cases with incomplete history and cases of unidentified, skeletonised or exhumed bodies were excluded from the study. The details of the cases were obtained from the autopsy reports, inquest papers, history and laboratory reports. These cases were studied by applying different criteria like methods of suicide concerning sex distribution, age group of the victims, socio-demographic profiles, place of occurrence and reasons for suicide. The data were tabulated and analysed using descriptive statistical methods. Ethical clearance was obtained from the Institutional Ethical Committee, JNIMS.

RESULTS

During the study period from 2014 to 2018, 1010 medico-legal autopsies were performed, out of which 120(11.88%) cases were suicidal. The highest incidence was 37(17.61%) cases in 2014 and at least 12(5.19%) cases in 2015. An increasing trend of suicide was seen from 2015-2018. Hanging was the most common method of suicide in 75(62.5%) cases, followed by poisoning in 29(24.16%) cases, and firearm in 5(4.16%) cases. Out of 120 cases, 72(60%) were males, and 48(40%) were females, with a male: female ratio of 1.5:1, as shown in **Table 1**.

Table 1 Methods of suicide with respect to sex distribution

Mode of suicide	Male	Female	Total	%
Hanging	41	34	75	62.5
Poisoning	19	10	29	24.16
Firearm	5	0	5	4.16
Others	7	4	11	9.16
Total	72	48	120	100

The highest number of suicidal deaths was seen in the age group of 21-30 years, constituting 47(39.16%) cases, followed by 31-40 years 29(24.16%) cases and the least was seen in the age group of 0-10 years 1(0.83%) case as shown in **Table 2**.

Table 2 Methods of suicide with respect to age

Age	Hanging	Poisoning	Firearm	Others	Total	%
0-10	1	0	0	0	1	0.83
11-20	23	6	0	2	13	25.83
21-30	26	13	2	6	47	39.16
31-40	19	5	2	3	29	24.16
41-50	2	3	0	0	5	4.16
51-60	3	1	1	0	5	4.16
>60	1	1	0	0	2	1.66
Total	75	29	5	11	120	100

Students constituted 39(32.5%), followed by homemakers in 32(26.66%) cases. The majority of the victims belong to the Hindu religion in 93(77.5%) cases, followed by Muslims in 12(10%) cases and Christians in 8(6.66%) cases. More cases, 86(71.66%), were from rural areas compared to 34(28.33%) in urban areas, as shown in **Table 3**.

Table 3 Socio-demographic profile of the victims

Occupation	Number	%
Student	39	32.5
Housewife	32	26.66
Farmer	9	7.5
Businessman	7	5.83
Security personnel	8	6.66
Labourer	6	5
Carpenter	3	2.5
School dropout	6	5
Unemployed	10	8.33
Total	120	100
Religion		
Hindu	93	77.5
Muslim	12	10
Christians	8	6.6
Others	7	5.83
Total	120	100
Regional distribution		
Rural	86	71.66
Urban	34	28.33
Total	120	100

Most commonly, suicide occurred during summer in 34(28.33%) cases and least in winter in 26(21.66%) cases. The most typical place of suicide was at home, with 73(60.83%) cases, followed by outdoors, 33(27.5%) cases and 14(11.66%) cases like boardings, hostels, jails, etc., as shown in **Table 4**.

Table 4 Place of occurrence

Method	Home	Outdoors	Others	Total
Hanging	43	25	7	75
Poisoning	19	6	4	29
Firearms	3	1	1	5
Others	8	1	2	11
P.C (%)	60.83%	27.5%	11.66%	120

The most typical reason for suicide is family disputes in 38(31.66%) cases, followed by unknown reasons in 26(21.66%) cases, love affairs in 18(14.16%) cases, examination failure in 16(13.33%) cases, financial crisis and alcoholism 8(6.66%) cases and mental disorder 7(5.83%) cases as shown in **Table 5**.

Table 5 Reasons for suicide

Reason of death	2014	2015	2016	2017	2018	%
Family disputes	14	5	7	6	6	31.66%
Love affairs	3	2	3	4	5	15%
Exams failure	2	1	2	3	8	13.33%
Mental disorder	1	0	1	2	3	5.83%
Financial crisis	3	0	2	1	2	6.66%
Alcoholism	2	1	1	2	2	6.66%
Unknown	12	3	4	3	4	21.66%
Total	37	12	20	21	30	120

DISCUSSION

In the present study, the incidence of suicide was 11.88% which is similar to the finding of Rajesh B et al., and in contrast to the finding of Pradipkumar S.^{11,9} Increasing trend was seen from 2015 to 2018, where various studies conducted have also shown increasing trends of suicidal death.

Male predominance over females was seen in all modes of suicide with an average ratio of 1.5:1, which agrees with the findings of Dhatarwal SK, Chavan KD et al., and Pradipkumar S, et al.^{4,5,9} This may be because of in our society; usually, males are the bread earners of the family. Hence, they are endowed with more responsibilities and pressures compared to the family's female counterparts.

The highest suicidal deaths were seen in the age group of 21-30 years which is inconsistent with the studies done by Pradipkumar S et al., Gaurang JP et al., Santhosh CS and Bande Nawaz.^{9,6,19} This group being young, are most active and explosive, and they might also tend to end their life instead of facing defeat.

Hanging was the most common method of suicide, which has a similar finding to the study of Rajesh B et al.¹¹ This may be because hanging produces swift and painless deaths, has a high fatality rate and has easy availability of ligature

materials and accessible suspension points. This is in contrast with other studies, where the most common method was poisoning, according to Awasthi C and Singh S, Chakraborty S and Rajan S.^{13,7}

In the study, most victims were Hindus (77.5%), followed by Muslims (10%) and Christians (6.66%). This finding agrees with Surangama C and Rajan S, Rajesh B et al.^{7,11} Reason may be because Hindus predominate in most areas under study. A higher incidence of suicidal deaths was observed in rural areas (71.66%) as compared to urban (28.33%), which is consistent with the finding of Awasthi C and Singh S.¹³ This could be due to high illiterate rates among the people in rural areas, poverty, less availability of choices in life and lack of awareness on mental health and other preventive measures including proper counselling among the people in rural areas. Most suicidal deaths occurred at the individual's home (67.5%), followed by outdoors and others. This finding is similar to the study of Rajesh B et al.¹¹ The reason could be easy access to means of suicide and privacy to perform the suicidal act.

From the study, it was found that the most typical reasons for suicide are family disputes (31.66%), followed by love affairs (15%), examination failures (13.33%), etc. This finding is consistent with the finding of Gaurang JP et al., and Prajapati P et al.^{6,18} A complex array of factors such as unhappy marriage, harassment by in-laws and husband, alcoholism/drug addiction, family violence, huge debt burden, poverty, etc. could lead to the breakdown of the family system.

CONCLUSION

The present study shows the increasing trend of suicidal deaths in Manipur. Male predominance over females was seen in all methods of suicidal deaths. The most vulnerable age group was between 21 years to 30 years. Suicide affects mainly youth who are capable of work, which causes a significant loss to the community. The present study also exposes a wide range of causative factors of suicide among different age groups and gender, which is due to a series of socio-economic, psychological and cultural practices. The underlying factors in the social system that promotes suicidal tendencies need to be identified and improve the community's mental health, preventing such incidence further. Effective measures must be taken to promote increased awareness among parents, teachers and health professionals about suicides. The public needs to be aware that committing/trying suicide is a sign of severe depression, and they should be treated in time. The need of the hour is to take preventive measures by identifying the risk factors of suicide and establishing free counselling centres, as suicide is a largely preventable public health problem.

Conflict of interest: None.

Ethical clearance: Taken.

Contribution of authors: We declare that this work was done by the author(s) in this article, and the authors will bear all liabilities about claims relating to the content of this article.

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