

A Profile of Suicidal Deaths in patients coming to a tertiary care centre A Prospective Study

¹Dr Mohammed Mufti Taher Nomani, ²Dr Najafi Begum

¹Assistant professor, department of FMT Prathima Institute of medical sciences

²Assistant Professor, Forensic Medicine, Kamineni institute of medical sciences sreepuram, Narketpally - Nalgonda (dt) 508 254 (t.s)

Corresponding Author

Dr Mohammed Mufti Taher Nomani

Assistant professor, department of FMT Prathima Institute of medical sciences

Article Received:02-01-2021

Article Accepted:20-02-2021

©2021 Biomedical and Biopharmaceutical Research. This is an open access article under the terms of the Creative Commons Attribution 4.0 International License.

ABSTRACT

Suicide is the common problem in India as well as in world. There are various methods to commit suicide. According to figures given by NCRB, in 2014 the suicide rate in India was 10.6/1 lakh population. Investigation of death is a feature of modern day's civilized system of society. Autopsy remains the most appropriate medical tool of investigation. The present study was undertaken to estimate the profile of suicidal deaths in respect with age, sex, marital status and socioeconomic status of the deceased. The study was conducted to find out the causative factors of suicidal deaths and to suggest the measure to prevent these deaths. It is observed that the most common age vulnerable to suicidal death is 21-30 years (41.58%), majority of cases 315(56.45%) of Suicidal deaths were Male, Victim with Low Socioeconomic Status is more vulnerable to suicide compared to high, It is also a significant finding that, the married persons living in joint family are less prone for suicide. Burn 127(22.55%) is most common method to commit suicide in female. In males, poisoning 183 (32.5%) is most common method to commit suicide. Most common cause of suicide is marital dispute 231 (41.03%) followed by illicit relations 119 (21.14%). To prevent these deaths certain suggestions are concluded.

Keywords: Suicidal Deaths, Tertiary Care Centre, Prospective Study

INTRODUCTION

Suicide is a global public health problem. Asia accounts for 60% of the world's suicides, at least 60 million people are affected by suicide or attempted suicide in Asia each year. Even though the pattern is changing from females towards male but today also the burden of female suicidal behavior, in terms of total burden of morbidity and mortality combined, is more in women than in men. Women's greater vulnerability to suicidal behavior is likely to be due to gender related vulnerability to psychopathology and to psychosocial stressors.¹ Suicidal deaths of married women have been an increasing trend in Indian society during the recent decayed, the most obvious reason behind such deaths is unending demands of dowry (cash / kinds) by their husbands and / or in laws, for which they torture the bride in such a way that she commits suicide, either by burning, poisoning, hanging, jumping from terrace or by some other means Death investigation is a feature of modern day's civilized system of society. The causes and factors responsible for bringing about the fatal outcome require thorough investigation. It is estimated that around 20% of global suicides are due to pesticide self – poisoning, most of which occur in rural agricultural areas in low- and middle-income countries. Other common methods of suicide are hanging and firearms.² Latur is the district place and one of the prominent cities in Marathwada region of Maharashtra. The city is known for junior college education, growing industrial businesses and agriculture market. In last 10-15 years it is going to develop very fast in the field of education, agriculture and Industry. Suicide is clearly an important and growing problem in the city. Very few researches were conducted in the past. So, this research was conducted. This may provide a framework from which one may do intervention to prevent such deaths.

AIMS & OBJECTIVES:

- To estimate demographic profile of suicidal deaths in respect to age, sex, occupation, marital status.
- To estimate various method to commit suicide
- To estimate causes of death
- To estimate motivation to commit the suicide

MATERIAL AND METHODS:

The present study was conducted in the Department of Forensic Medicine and Toxicology at VDGMCL Latur, Maharashtra. It is a prospective, cross-sectional study. The present study was undertaken to estimate the profile of suicidal deaths in respect with age, sex, marital status and socioeconomic status of the deceased and to find out the causative factors in these suicidal deaths to suggest the measure to prevent these deaths. The study was conducted for a period from 1 April 2016 to 31 March-2018. During this period out of 1748 cases, 558 cases were of suicide cases. Ethical clearance was obtained for the study. In this study, information is collected from inquest reports, hospital papers and relevant records. External and internal examination of deceased was carried out during medico-legal autopsy. Information was collected in the form of pro-forma. Which is then analyzed and conclusions are made. Data was statistically analyzed with the help SPSS20 software, windows -7, (Microsoft word and Microsoft Excel)

RESULTS AND OBSERVATIONS:

Table No-1 shows that the most common age group susceptible to suicidal death is 21 to 30 years 232 (41.58%), followed by 11 to 20 years age. The extremes of age group show fewer incidences of suicidal deaths. Maximum death occurred between 15 to 30 years in both male and female category. Age 15 to 60 is the most active and productive period of life.

Table: 01: Age and sex wise (M-Male, F-Female, % Percentage) distribution of victims of Suicidal Deaths (n= 558).

Age (yrs)	M	%	F	%	Total	%
00-10	00	00	00	00	00	00
11-20	26	4.66	62	11.11	88	15.77
21-30	127	22.77	105	18.81	232	41.58
31-40	63	11.29	55	9.86	118	21.15
41-50	45	8.06	12	2.16	57	10.22
51-60	36	6.45	07	1.25	43	7.70
61-70	11	1.97	02	0.36	13	2.33
71-80	07	1.25	00	00	07	1.25
Total	315	56.45	243	43.55	558	100

Table 2 shows that the most of the victims belong to low socioeconomic status. Lack of education, unemployment and chronic addiction commonly observed in low socioeconomic class. Modified B G Prasad's classification of Per Capita Income is taken into consideration for estimation of socio-economic status in the present study.

Table 2: Suicidal deaths according to victim's socioeconomic status.

Social Class	Cases	Percentage
I	44	7.89
II	111	19.89
III	198	35.48
IV	139	24.91
V	66	11.82
Total	558	100

Table: 3: Trends of suicide in relation to type of family and marital status (n=558)

Family type	Nuclear		Joint		Total	
Marital Status	No	%	No	%	No	%
Married	264	47.31	106	19.00	370	66.31
Unmarried	70	12.54	62	11.11	132	23.66
widow	02	0.36	19	3.41	21	3.76
Divorced	02	0.36	07	1.24	09	1.61
Separate/Other	18	3.23	08	1.43	26	4.66
Total	356	63.80	202	36.20	558	100

Table 3 shows that in married peoples with nuclear family suicide is most common manner of death 264 (47.31%), but population of peoples with such category is much more as compared to others so, this finding is of little significance. However, the widows living in joint family 19 (3.41%) and divorced persons living in joint family 07 (1.24%) are also seen to be more vulnerable to commit suicide. It is also a significant finding that, the married persons living in joint family are less prone for suicide and the incidence of suicidal death is 106 (19.00%) which is far less than their counterpart victims **Table 4** shows that the most preferred method for self-immolation among females is Burn 126(22.58%). Whereas poisoning 182 (32.62%) is most common preferred method to commit suicide in male. Hanging is also accounted a major method for self-immolation. Rail cutting is not taken as method of suicide in females, and burn 33(5.91%) is not a common method of suicide in males.

Table: 4: Methods used to commit suicide by both sexes. (n = 558)

Methods of suicide	Male		Female		Total	
	Cases	%	Cases	%	Cases	%
Poisoning	182	32.62	63	11.29	245	43.91
Hanging	92	16.49	50	08.96	142	25.45
Burns	33	05.91	126	22.58	159	28.49
Drowning	04	00.72	03	00.54	07	01.25
Railway Cutting	02	00.36	00	00.00	02	00.36
Fall from height	02	00.36	01	00.18	03	00.54
Total	315	56.45	245	43.55	558	100

Table 5: Distribution of Deaths as per Occupation (n=558)

Sr No	Profession	Male	Female	Total	Percent (%)
1	House wife/ House hold workers	00	161	161	28.85
2	Farmer/ Agriculture work	57	03	60	10.75
3	Student	22	44	66	11.83
4	Business Man	16	1	17	3.05
5	Government Service	13	2	15	2.69
6	Daily Wages Worker	86	11	97	17.38
7	Technical Workers	28	04	32	5.73
8	Clerical/ office workers in Private sector	32	04	36	6.45
9	Medical Profession	04	01	5	0.90
10	Un-employed	58	11	69	12.37
11	Total	315	243	558	100

Table: 6: Showing Percentage wise reasons for suicides. (n = 558)

Causes for suicide	Male	Female	Cases	Percent (%)
Marital disputes	60	81	141	25.27
Domestic Violence on parents & In-laws	26	64	90	16.13
Financial Problems	69	28	97	17.38
Alcohol Addiction	46	00	46	8.24
Psychiatric illnesses	22	31	53	9.50
Education & Failure in examination	08	04	12	2.15
Unemployment	34	02	36	6.45
Chronic / Terminal Diseases	05	00	05	0.90
Failure in love	11	04	15	2.69
Reproductive/ Sexual Reasons	03	02	05	0.90
Stress of work	07	06	13	2.33
Delay in marriage	04	02	06	1.07
Old Age	03	00	03	0.54
Not Known	16	20	36	6.45

Total	315	243	558	100
--------------	------------	------------	------------	------------

Table 5 shows that the females working in home or housewives are major group among females susceptible for self-immolation than females who are working women. In male, majority were daily wages workers like Hamal, cleaner, helpers in construction work etc. Unemployed people and farmers, as well as technical workers like driver, tailor, electrician painter, plumber etc. Students are also seen to be more prone for self-immolation that may due to failure of exam or fear to fail in exam or overburden of ambitions. Student may commit suicide due to failure in love affairs. **Table 6** shows that the intent as to cause of committing suicide is varied and multifactorial. Most of the suicides are to be seen to occur due to Marital disputes 141 (25.27%) and domestic problems 90 (16.13%). Financial problems, alcohol addiction, unemployment, failure in exam and love are the reasons which stimulates self – immolation.

DISCUSSION

Every year 70300 people take their own life and there are many people who attempt suicide. Suicide occurs throughout the lifespan and was the fourth leading cause of death among 15–29-year old's globally in 2019. Suicide does not just occur in high- income countries, but is a global phenomenon in all regions of the world. In fact, over 77% of global suicides occurred in low- and middle – income countries in 2019.² Suicide is the third leading cause of death among young adults worldwide. There is a growing recognition that prevention strategies need to be tailored to the region-specific demographics of a country and to be implemented in a culturally- sensitive manner. There has been an increase in the rates of suicide in India over the years, although trends of both increases and decline in suicide rates have been present. Distinct from global demographic risk factors, In India, marital status is not necessarily protective and the female: male ratio in the rate of suicide is higher. The motives and modes of suicide are also distinct from western countries.³

The suicide rate in India is comparable to that of Australia and the USA; and the increasing rates during recent decades is consistent with the global trend. Data on suicide in India are available from the National Crime Records Bureau (NCRB; Ministry of Home Affairs). The suicide rates in India rose from 6.3 per 100,000 in 1978 to 8.9 per 100,000 in 1990, an increase of 41.3% during the decade from 1980 to 1990, and a compound growth rate of 4.1% per year. More recent data, however, reveal a different picture. The rate of suicide showed a declining trend from 1999 to 2002 and a mixed trend during 2003- 2006, followed by an increasing trend from 2006 to 2010. From 2011 onwards rate of suicide remains more or less constant till 2019 except slight dip in 2017. In year 2020, there has been surge in the incidence of suicide attributed to lockdown due to COVID 19.⁴ The present study was undertaken to evaluate the pattern and burden of suicidal deaths in respect with age, sex, marital status, socio-economic status of the deceased and to find out the causative factors in these suicidal deaths to suggest the measure to prevent these deaths.

Analysis of our data shows Males (n=315) outnumbered females (n=243). Male to female ratio was 1.30:1. Global statistics too indicate that males die by suicide more frequently than do females however; reported suicide attempts and suicidal ideation are more common among females. This gap is known as the “gender paradox of suicidal behaviour”. The extremes of age group show fewer incidences of suicidal deaths. This finding is very much similar to the findings of Anjanamma et al⁵ Santhosh et al⁶, Baruah et al⁷ and Jha S et al.⁸ This finding is due to the fact that the age from 15-40 years is the most active period of life, in which the peoples are generally healthy and exposed to the outer environment. It is observed that, suicides 243(43.55%) are the common manners of death in females. This finding is also nearly similar to the observations in the study of Yousufani et al⁸ and Rathod et al.⁹

In this study (**Table-2**), we found that the most of the victims belong to low socioeconomic status. This finding is very much similar to the findings of Santhosh et al⁶ and Baruah et al.⁷ It is observed that (**Table-3**) in married peoples with nuclear family suicide is most common manner of death 264 (47.31%), but population of peoples with such category is much more as compared to others so, this finding is of little significance. However, the widows living in joint family 19 (3.41%) and divorced persons living in joint family 07 (1.24%) are more vulnerable to commit suicide. It is also a significant finding that, the married persons living in joint family are less prone for suicide and the incidence of suicidal death is 106 (19.00%) which is far less than their counter part victims. Probable explanation for this is in joint family the divorced woman is degraded in our community and she may go in depression, however in the joint family the married men feel more secure and they remain mentally more stable even in the worst situations.

In this present study (**Table-4**) it is observed that in females Burn 126(22.58%) is method of choice to commit suicide. In males Poisoning 182 (32.62%) is most common method to commit suicide. Rail cutting is not taken as method of suicide in females, and burn 33(5.91%) is not a common method of suicide in males. This finding is similar to study of Jha et al.⁸ Possible reason is that, for female, fuel (Kerosene) is easily available and they are regularly near to the fire in the kitchen. In both sex the motive for suicides is different, so as the method varies. Saraswathi et al¹¹ found poisoning is the commonest method in both male and females. Niraj Kumar et al¹¹ were found that hanging was most preferred method among males whereas self-immolation by fire was most common among females. According to Bulletin of the World Health Organization on methods of suicides three methods of suicides- hanging, pesticide suicide and firearm suicide

dominate country specific suicide patterns. Hanging and pesticide suicide are more prevalent in developing Asian countries whereas firearm suicide predominates in several countries in the Americas and also in some European countries.¹² In present study we found that the category from house wife and house hold workers include 161 (28.85%), category from daily wage workers includes 97 (17.38%). Saraswathi et al¹⁰ found that 15.67% were housewife and 16.56% were daily wage workers, Niraj Kumar Arun Kumar Singh¹¹ found that 11.41% were housewife in their study. In Indian culture females are supposed to do all house hold work. They are less listened by the other family members. Most of the times family members whether they are from the side of parents or from spouse expect from women to adjust with any problems or any odd surroundings. Female may not get support from the family whenever she needed so she could not fulfill her needs or ambitions. Most of the times women are mistreated in their own house. Girls expect or look for the best after their marriage but get disappointed after marriage due to unforeseen surroundings or treatment by in laws and spouse. The uneven situations may give rise to act like suicides after marriages. Unemployed peoples and daily wage workers cause self-emolition as of financial crisis. Basic need is not to be satisfied due to financial problems which leads to stress, depression and feelings of worthlessness that brings on act of suicide.

Among the causes or intent or motive of suicide (Table-6), the most common cause is marital dispute 141(25.27%) the second most common cause of suicide is financial problems 97 (17.38%), and the third common cause is Domestic violence on parents and in laws 90 (16.13%), these three of comprises 328(58.78%) of the total cases of suicide. And Marital Disputes and domestic violence on parents and in laws comprises 231 (41.40 %) nearly similar findings observed in the study of Santhosh et al⁶, Baruah et al.⁷ Suicidal deaths due to alcohol addiction found in 46(8.24%) and education and failure in examination found in 12 (2.15%) cases, however Saraswathi et al

¹⁰ found that the alcohol addiction contributes 16.72% and exam failure contributes 6.27% of total suicidal deaths in his study. Children face competitive and comparison stress sometimes from parents, teachers or their friends. Unemployment, workload stress, failure of crops in the farm, uncertainty of jobs, problems like infertility and sexual problems are also give rise to act of suicide. Deepak Sharma et al¹³ observed in their study that the most common manners of committing suicidal deaths were poisoning followed by hanging, burns, drowning and etc. The males outnumbered the females. More married persons committed the suicide. Their study also reveals that age group 21-30 includes most suicides. These findings of their study are similar to our study.

In females, Vinka Maini et al¹⁴ found that poisoning is most common method for suicide which is followed by hanging, burn and drowning. However, we found that burn is the commonest method to commit suicide which is followed by poisoning, hanging and drowning. In females, family disputes were most common underlying cause for suicide in their study which is similar finding to our study.

SUMMARY AND CONCLUSIONS:

In this present study it is observed that, the young males with Low Socioeconomic Status are more vulnerable to suicidal deaths compared to counterparts. It is also a significant finding that, the married persons living in joint family are less prone for suicide, in females Burn is method of choice to commit suicide. In males Poisoning is most common method to commit suicide, most common cause of suicide is marital dispute followed by domestic violence on parents and in laws. The females involved in domestic or household work are the more cases which is followed by daily wage workers

REFERENCES

1. Vijayakumar L. Suicide in women. Indian J. Psychiatry. 2015; 57(6): 233-238.
2. Suicide. WHO. (Internet) [Cited on 2nd March 2021]. Available from: <https://www.who.int/news-room/fact-sheets/detail/suicide>
3. Radhakrishnan R, Andrade C. Suicide: An Indian Perspective. Indian J Psychiatry. 2012; 54(4): 304-319.
4. Accidental Deaths and Suicides in India 2020. National Crime Records Bureau (Ministry of Home Affairs) Government of India, New Delhi. (Internet) [Cited on 02nd March 2021]. Available from: https://ncrb.gov.in/sites/default/files/ADSI_20_20_FULL_REPORT.pdf
5. Anjanamma TC, Vijaya NM, Vijayanath V, Athani P. A study of Unnatural death at MVJ Medical College & Research Hospital, Karnataka. Indian J Forensic Community Med. 2016; 3(2):138-141 Santhosh CS, Nawaz B. Pattern of Suicidal Deaths at District Hospital Davangere- A Cross-Sectional Study. J. Indian Acad. Forensic Med; 2013; 35 (3): 71-3.
6. Baruah AM, Chaliha R. Pattern of Suicidal Deaths Brought for Medico Legal Autopsy at Guwahati Medical College: A Retrospective Study. J. Punjab Acad. Forensic Med. Toxicol. 2014; 14(2).
7. Yousfani GM, Memon MU. Spectrum of Unnatural Deaths in Hyderabad: An Autopsy Based Study; 2006- 2008. International Journal of the Dow University of Health Sciences. 2010; 4(2): 54-7.
8. Rathod SN, Bharatwaj RS. One Year Profile of Unnatural Deaths in Pondicherry- A Retrospective Study 2009; International Journal of Pharma Research and Health Sciences. 2015; 3 (1): 533-537.

9. Saraswathi N, Keshva HB, Kumarshetty A. Pattern of Suicidal Deaths in Belgavi: Retrospective Study; *Medicolegal Update*. April – June 2021; 21 (2): 1109-1113.
10. Kumar N, Singh AK. Suicidal pattern of cases brought to mortuary of a tertiary care center: *Indian J Forensic Community Med*. 2015; 2 (4): 214- 219.
11. Ajdasic- Gross V, Weiss MG, Ring M, Bopp M, Gutzwiller F, Rossler W. Methods of suicide: international suicide patterns derived from the WHO mortality database. *Bulletin of the World Health Organization*. 2008; September; 86.
12. Sharma D, Meena SK, Verma LC. Suicidal deaths: A three years autopsy-based study. *IP Int J Forensic Med Toxicol Sci*. 2021; 6(1):13–16.