Original Article

Sociodemographic Profile of Hanging Cas - An Autopsy Based Study in Bangalore East Region

Mallikarjun S Ballur[1]

Abstract:
Death is certain for all living beings, but only humans end their lives prematurely by committing suicide.Among various methods opted for suicide, hanging is one of the most common, as materials necessary are easily available and of high success rate. This study was conducted among victims of hanging brought to a tertiary care centre, Bangalore for a period of 2 years. A sum total of 232 cases were selected for this prospective study. Detailed information regarding the deceased and the circumstances of death was collected from the police and relatives by a questionnaire. Results showed thatmany victims were in the 21-30 years' age group, male, married, literates, employed and belonged to Hindu community, lower socioeconomic status and nuclear family. The hanging occurred during night with marital disharmony being the main motive. Delayed deaths were minimal. Based on the findings of our study, we have formulated suggestions to the concerned authorities to decrease the incidence of suicidal death.

Keywords:Hanging; Suicide; Autopsy; Age; Sex distribution.

Introduction

Suicide is defined as intentionally taking one's own life and comes from the Latin *suicidium*, which literally means "to kill oneself." Death is certain for all living beings, but only humans end their lives prematurely by committing suicide. Among various methods opted for suicide, hanging is one of the most common, as materials necessary are easily available and of high success rate. Hanging is in practice from the time immemorial and before advent of civilization. In ancient Rome, death by suicidal hanging was regarded as particularly shameful, and those who had died by this method were refused a burial. According to the WHO, every year, almost 1 million people die fromsuicide, a "global" mortality rate of 16 per 100,000, or one death every 40 seconds[1]. In 2015 NCRB report 45.6% of the victims took the extreme step by hanging themselves, 27.9% by consuming poison, 5.4% by drowning and 7.2% by self-immolation[2]. This study is conducted on the basis of statistical analysis of hanging and to compare the result obtained with other studies. The socio-demographic factors like age, sex, marital status, locality, education, occupation, socioeconomic status, type of family, place and time of incident, past history of attempted suicide and motive of suicide are important to predict and prevent suicide attempt and its fatality.

[1]Associate Professor, Department of Forensic Medicine Bharati Vidyapeeth (Deemed to be University) Medical college, Pune- 411043
Correspondence:Dr. Mallikarjun Ballur
Email id- drmallikarjunballur@gmail.com
Contact no-9922577571

Received on 27.08.2019	Accepted on 12.01.2020

Materials and Methods

This prospective study was conducted among victims of hanging brought to tertiary care centre, Bangalore for a period of 2 years. A sum total of 232 cases were selected for this prospective study. The study was initiated after approval from the Institutional Ethics Committee. Data analysis was performed by Statistical Package for Social Sciences (SPSS) version 20.0 and the results werepresented as frequency and percentage in figures and in tables. Detailed information

regarding the deceased and the circumstances of death was collected from the police and relatives by a questionnaire. In some cases, this information was supplemented by either, visit to scene of occurrence or from the photographs of scene of occurrence.

Results

During this analytical study, it was found that out of 232 cases, male preponderance was seen in 66.81% cases in comparison to 33.19% cases of females in ratio of 2:1 (Table 1). People in 21-30 years' age group were more vulnerable to hanging as 44.83% deaths occurred in this group. The next age group was 31-40 years, in which 21.9% deaths occurred. (Table 2). In the present study, it was observed hanging as a method of suicide was highest among Hindu population (84.48%) followed by Christians (9.05%) and Muslims (6.47%) as shown in Figure 1.

Table No 1: Distribution of the study population according to sex

Sl.No	Sex	No. of cases	Percent
1	Male	155	66.81
2	Female	77	33.19
	Total	232	100

Table No 2: Distribution of the study population according to age

Sl. No.	Age in years	No. of cases	Percent
1	<10	1	0.44
2	11-20	40	17.24
3	21-30	104	44.83
4	31-40	51	21.98
5	41-50	20	8.62
6	51-60	11	4.74
7	61-70	3	1.29
8	>70	2	0.86
	Total	232	100

In our study, married males (89) were more prone to hang themselves, when compared to married females (44). Even in the unmarried section, males (65) outnumbered the females (34). In this study, hanging deaths occurring in urban areas (82.4%) outnumbered the rural area (17.6%) as shown in Tables 3 & 4.

Figure 1. Showing distribution of the study population according to the religion

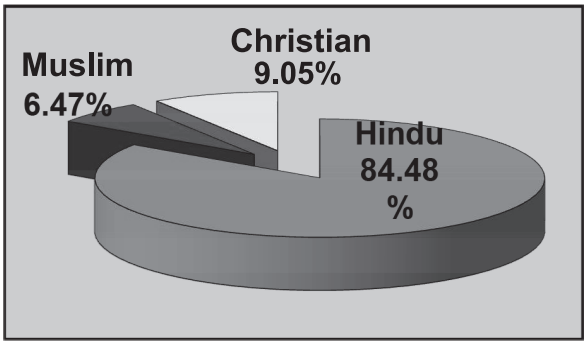


Table No 3: Distribution of the study population according to the marital status

Sl.No	Marital status	No. of cases	Percent
1	Married	133	57.33
2	Single	99	42.67
	Total	232	100

Table No 4: Distribution of study population according to the locality

Sl.No	Locality	No. of cases	Percent
1	Urban	191	82.4
2	Rural	41	17.6
	Total	232	100

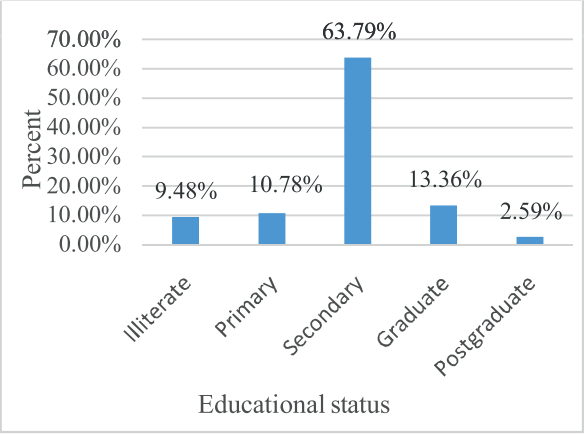
Education is also playing an important role in unnatural deaths like hangings. 63.79% had secondary education, 10.78% had primary education, and 9.48% were illiterates. Even graduates (13.36%) and post graduates (2.59%) were seen in the present study (Figure. 2) When we compare the occupational status (Table 5) of the deceased; majority were employed persons (59.92%). House wives accounted for 34 deaths (14.66%) and students accounted for 33 deaths (14.22%). Unemployed persons also accounted for 24 deaths (10.34%). Most of the victims were from low socio-economic status (74.14%); middle class victims occupied 23.28% of deaths and high income group people were found in 2.58% of deaths (Table 6)

People living in nuclear families (81.03%) outnumbered those in non-nuclear families (18.97%) (Table 7). Most of the people in the study population found night (32.75%) as most convenient time to hang, followed by

Table No 5: Distribution of the study population according to their occupation

Sl. No	Occupation	No. of cases	Percent
1	Self employed	1	0.43
2	Student	33	14.22
3	Employed(gov /priv)	139	59.92
4	Housewife	34	14.66
5	Unemployed	24	10.34
6	Agriculturist	1	0.43
	Total	232	100

Figure No 2. Showing distribution of the study population according to Educational Status



mid-day (30.61%). Morning is also taking good number of lives by hanging (21.98%), whereas evening (12.51%) and early morning (2.15%) are little less than these numbers as shown in Table 8. Majority of the people are choosing bedroom (51.73%) for hanging followed by hall (35.35%); kitchen (7.33%) and bathroom (2.58%). Among the suicides committed, 14.23% of people in study population had past history of suicidal attempts, in which they could not succeed. Remaining 85.77% of peoplehad no past history of suicidalattempts.

In the present study, marital disharmony claimed 93 lives (40.08%). Financial problems accounted for 30 deaths (12.94%) and chronic physical pain accounted for 28 deaths (12.07%), other motives behind hanging were love failure (9.91%);

Table No 6: Distribution of the study population according to their Socioeconomic Status

Sl. No	Socioeconomic status	No. of cases	Percent
1	Lower	172	74.14
2	Middle	54	23.28
3	Upper	6	2.58
	Total	232	100

Table No 7: Distribution of the study population according to the type of family

Sl.No	Type of family	No. of cases	Percent
1	Nuclear	188	81.03
2	Non-nuclear	44	18.97
	Total	232	100

unemployment (9.06%); psychiatric disorders (6.89%); exam failure (6.46%) and dowry harassment (2.58%). In the present study population, 9.48% of people left behind the suicide notes depicting their problems and motive for suicide. Remaining (90.52%) had not written any suicide note (Figure 3). In the present study, treatment was taken by 11.20% of the people after fatal attempt prior to death; whereas 88.80% of the people had not received any treatment.

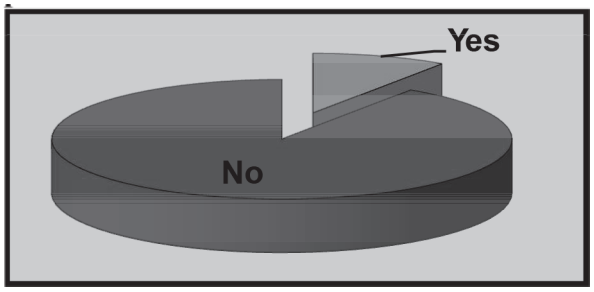
Table No 8: Distribution of the study population according to the Time of Incident

Sl. No	Time of incident	No. of cases	Percent
1	Early morning	5	2.15
2	Morning	51	21.98
3	Mid-day	71	30.61
4	Evening	29	12.51
5	Night	76	32.75
	Total	232	100

Discussion

In our present study, male predominance was seen in comparison to females in ratio of 2:1. Similar findings were observed in the studies conducted by Robert JK[3]; B. R. Sharma[4]; Sharma BR[5]; Hawton K[6]. But in a study conducted by M Ahmad[7] female victims

Figure No 3. Distribution of the study population according to the Suicide Note produced



outnumbered male victims & in another study by T. Saisudheer[8] in Kurnool male to female ratio of victims was 1:2. During this analytical study, people in 21-30 years of age group were more prone to hanging and next age group was 31-40years. Similar findings were observed by M Ahmad[7]; Bastia BK[9]; Sharma BR[5]; Mohanty S[10]. This finding was slightly different from other study done by Kanchan T[11] where many of victims were in their 3rd decade. In this study, it was observed hanging as a method of suicide was highest among Hindu population. Concordant findings were found by MR Nagendra Gouda[12]; Khajuria B[13]; Kanchan T[11]. In the present study, married males were more vulnerable to hang themselves, when compared to married females. This was comparable with the observations by M Ahmad[7]; Mohanty S[10]; T. Saisudheer[8], whereas in a study conducted by B.S. Chavan[14] unmarried victims were more. In the present study, hanging deaths occurring in urban areas exceeded the rural area. This may not represent the magnitude of entire unnatural deaths occurring in those areas. These findings are in collaboration with B.S. Chavan[14] but, in study conducted by Mohanty S[10] many were from rural background. Most of the people in our study had secondary education, followed by primary education, and few were illiterates. It is in comparison with studies by B.S. Chavan[14]; MR Nagendra Gouda[12]; Mohanty S[10]. Most of the victims were from low socio-economic status in our study, these findings are comparable to other previous studies conducted by B.S. Chavan[14]; MR Nagendra Gouda[12]; Mohanty S[10], whereas in a study conducted by T. Saisudheer[8] incidence was more common in middle income group. People living in nuclear families exceeded those in non-nuclear families. These findings are in agreement with the study of MR Nagendra Gouda[12]. Most of the people in the study population found night as most convenient time to hang, followed by mid-day. These findings correspond to observation made by M Ahmad[7]; Cun-Xian Jia[15]; Vijayakumari N[16] and in the studies conducted by B.S. Chavan[14]; Mohanty S[10] it was argument. Majority of the people in this study are choosing bedroom for hanging followed by hall; kitchen and bathroom. These findings correspond to other studies in this field by M Ahmad[7]; Olive Bennewith[17]; Clive Trevor cooke[18]. Among the suicides committed, very few people in study population had past history of suicidal attempts. Similar findings were observed by Demirci S[19]; B.S. Chavan[14] and in the studies conducted by Demirci S[19]; Mohanty S[10] it was argument.

In the present study, marital disharmony, financial problems, chronic physical pain, love failure were motives behind hanging. Similar findings were observed in the studies conducted by M Ahmad[7]; Vijayakumari N[16]; Mohanty S[10] whereas, in a study conducted by MR Nagendra Gouda[12] physical illness was the most common motive. In the present study population, very few people left behind the suicide notes depicting their problems and cause for suicide. These findings correspond to observation made by Demirci S[19]; Bhatia MS[20]; Mohanty S[10]. In our study, very less people took treatment after fatal attempt prior to death, similar findings were observed in the studies conducted by Olive Bennewith[17]; David G[21].

Conclusion

Many victims in our study were in the 21-30 years' age group, males, married, literates, employed and belonged to Hindu community; lower socioeconomic status and nuclear family. The hanging occurred during night with marital disharmony being the

main motive. Educating people, particularly from poor families, so that they can become self-sufficient, can prevent suicide to some extent. The society, through various agencies, like media coverage and NGO's should be mobilized. Centers should be established to provide free counseling to the families and newlywed couple about their expected problems and their solutions. A change in attitude and mindset of society, judiciary, legislature is needed to bring down this social evil.

Conflict of interest: None
Source of funding: None
Ethical clearance: Obtained from Institutional Ethics committee

References

1. M.S.Reddy. Suicide incidence and epidemiology. Indian J Psychol Med. 2010 Jul-Dec; 32(2): 77-82.
2. Accidental deaths and Suicides in India 2015. New Delhi : National crime records bureau 2016: 205-6.
3. Robert JK, Pauline D. Death by hanging: implications for prevention of an important method of youth suicide. Australian and Newzeland Journal of Psychiatry. Oct 2000; 34(5): 836-41.
4. Sharma BR, Harish D, Singh VP, Singh P. Ligature mark on neck how informative? J Indian Acad Forensic Med. 2005; 27(1):10-15.
5. Sharma BR, Harish D, Sharma S, Singh H. Injuries to structures in deaths due to constriction of neck, with special reference to hanging. J Forensic Leg Med. 2008 July; 15(5): 298-305.
6. Hawton K, Bergen H, Casey D, Simkin S. General hospital presentations of non-fatal hanging over a 28-year period: case–control study. Br J Psychiatry. 2008 Dec; 193(6):503-4.
7. M Ahmad, MZ Hossain. Hanging as a Method of Suicide: Retrospective Analysis of Postmortem Cases. JAFMC Bangladesh. December 2010; 6(2):37-9.
8. T.Saisudheer, T.V.Nagaraja. A study of ligature mark in cases of hanging deaths. Int J Pharm Biomed Sci.2012; 3(3):80-84.
9. Bastia BK, Kar N. A Psychological Autopsy Study of Suicidal Hanging from Cuttack, India: Focus on Stressful Life Situations. Arch Suicide Res. 2009; 13(1):100-4.
10. Mohanty S, Sahu G, Mohanty MK, Patnaik M. Suicide in India: a four-year retrospective study. J Forensic Leg Med. 2007 May; 14(4):185-9.
11. Kanchan T, Menezes RG. Suicidal hanging in Manipal, South India Victim profile and gender differences. J Forensic Leg Med.2008 Nov; 15(8):493-6.
12. Nagendra Gouda M, Rao SM. Factors Related to Attempted Suicide in Davanagere. Indian J Community Med. 2008 Jan; 33(1): 15–18.
13. Khajuria B, Sharma R, Bharti O C, Kumar D. Profile of Suicidal Autopsies in a Militancy-Affected State of India. Journal of Clinical and Diagnostic Research.2007 December; 1(6): 505-10.
14. Chavan BS, Singh GP, Kaur J, Kochar R. Psychological autopsy of 101 suicide cases from north western region of India. Indian J Psychiatry. 2008 Jan; 50(1):34-38.
15. Jia CX, Zhang J. Characteristics of Young Suicides by Violent Methods in Rural China. J Forensic Sci. 2011 May; 56(3):674-8.
16. Vijayakumari N. Suicidal Hanging: A Prospective Study. J Indian Acad Forensic Med. 2011; 33(4):353-5.
17. Bennewith O, Gunnell D, Kapur N, Turnbull P, Simkin S, Sutton L, Hawton K. Suicide by hanging: multicentre study based on coroner's records in England. British Journal of Psychiatry. 2005; 186(3):260-1.
18. Cooke CT, Cadden GA, Margolius KA. Death by hanging in western Austrialia. Pathology. July 1995; 27(3):268-72.
19. Demirci S , Dogan KH , Erkol Z , Deniz I. Precautions Taken to Avoid Abandoning the Act of Hanging and Reducing Pain in Suicidal Hanging Cases. Am J Forensic Med Pathol. 2009 Mar; 30(1):32-5.
20. Bhatia MS, Verma SK, Murty OP. Suicide notes: psychological and clinical profile- Int J Psychiatry Med. 2006; 36(2):163-70.
21. David G, Olive B, Keith H, Sue S, Nav K. The epidemiology and prevention of suicide by hanging: a systematic review. Int.J.Epidemiol. Apr 2005; 34(2): 433-42.