

Insight to the psychosocial factors of survivors of suicidal hanging

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ABSTRACT

Introduction: The incidence of hanging has increased over the last ten years and is the most common method of suicide. Because of its multifactorial causation, the reason behind hanging remains unfolded unless the victims leave a suicidal note. In the present study, the psychodynamic factors of hanging were assessed among the survivors of suicidal hanging. **Materials and Methods:** The cross-sectional study was conducted at S.C.B Medical College and Hospital, Cuttack, India, over a period of three years. Eighty-two individuals admitted in medicine ward of this tertiary care hospital to receive treatment for the complications as a sequel of hanging and willing to participate in study were included after obtaining informed consent. The information was recorded in a pre-designed pro forma. **Results:** Subjects from rural areas (87.8%) and low socio-economic backgrounds (67.1%) attempted suicide more often. Most of the victims were in the age group of 21–30 years, followed by less than 20 years. The most common cause of attempted suicide by hanging was family-related issues, and mainly by immediately available materials like dupattas, saree, lungi, and other fabrics. Females in rural areas and males from urban areas attempted suicide by hanging in significantly higher proportions ($P = 0.041$). **Conclusion:** Most people commit suicide at a younger age due to failure to cope with the different stressful situations. The most common reason for attempted suicide by hanging was family-related issues. Early intervention in family disputes in developing countries, especially in younger individuals, may help to curb suicide.

Keywords: Hanging, post-hanging survivors, suicide, unnatural death

Introduction

Hanging is the most common method of suicide, followed by poisoning.^[1] Hanging is almost always suicidal in nature or should always be thought in the line of suicide unless proven otherwise. However, partial hanging (when any part of body touching the ground) still creates confusion regarding the manner of death

among the general public. And moreover, in many fatal cases of hanging, the reasons for suicide and its psychodynamic factors remain unfolded unless victims leave a suicidal note. Through this study, an attempt is made to assess the socio-demographic profile and the psychosomatic factors responsible for survivor's suicidal attempt.

Materials and Methods

This prospective cross-sectional study was conducted at S.C.B Medical College and Hospital, Cuttack, India, over a period of three years. This hospital is a tertiary care teaching center situated in central Orissa. This hospital receives patients from Cuttack and adjoining districts of Orissa and also from nearby

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states like West Bengal and Chhattisgarh. During this period, we have received 82 cases of post-hanging survivors who were admitted to the medical ward for treatment of the complications arising as a result of hanging. Attempted suicidal cases other than hanging are excluded from the study. After taking a written consent, an interview was conducted by providing questionnaire in a pro forma to the patients, their relatives, friends, and caretakers. The questionnaire was pretested on ten subjects. Necessary changes in the questionnaire were made in line with their responses. Data from these ten subjects were excluded from the final analysis. The relevant information was gathered from the patients, their relatives, friends, and caretakers. The relevant information includes information regarding age, sex, marital status, place and time of hanging, ligature material used, point of suspension, platform used, history of alcohol abuse, and other predisposing factor responsible for suicidal attempts. History of any predisposing disease or any associated psychiatric condition, which led to suicide, is also considered. We calculate the socio-economic status of the patients by using Modified BG Prasad Scale.^[2] We follow up with the patient till they are discharged from the hospital. The confidentiality was maintained throughout the study. All the information is filled in and analyzed by the SPSS version 27.0 (IBM corporation, Armonk, USA). *P* value less than 0.05 was considered statistically significant.

Results

The present study comprised of 82 survived cases after attempted hanging and admitted to the medicine department for treatment. Females (59.8%) outnumbered males (40.2%), and most of the victims were in the age group of 21–30 years (43.9%), followed by less than 20 years (22.0%). Subjects from rural areas (87.8%) and low socio-economic backgrounds (67.1%) attempted suicide more often. The frequency of suicide attempts was higher in subjects with primary and secondary level education. An almost equal percentage of the unemployed subjects (Housewives and students) and married individuals had attempted suicide compared to gainfully employed and unmarried subjects, respectively [Table 1].

The hanging place was mostly inside the home, and clothes (dupatta, saree, lungi, gamuchha) were the most commonly used material. We found an equal percentage of partial and complete hanging. Attempts of suicide varied equally throughout a calendar year (quarter on quarter) and time of the day. The most common cause of attempted suicide was issues related to the family. Although clothes are more used for hanging in both gender, we observed a significantly higher preference for the use of ropes among female subjects than males (*P* = 0.012). Gender was not associated with the place, reason, type, and timing of attempted suicide by hanging [Table 2].

A higher proportion of females of less than 30 years attempted hanging compared to males, while the proportion was higher among males between the ages of 31–40 years. This difference

Table 1: Socio-demographic profile of post-hanging survivor (n=82)

Variable	Number	Percentages
Age (in years)		
≤20	18	22.0
21-30	36	43.9
31-40	16	19.5
>40	12	14.6
Gender		
Male	33	40.2
Female	49	59.8
Residence		
Urban	10	12.2
Rural	72	87.8
Religion		
Hindu	79	96.3
Muslim	03	3.7
Socio-economic status		
High	01	1.2
Middle	26	31.7
Low	55	67.1
Education		
Illiterate	13	15.9
Primary	28	34.1
Secondary	38	46.3
Graduate	03	3.7
Occupation		
Housewife	28	34.1
Student	13	15.9
Gainfully employed	41	50.0
Marital status		
Unmarried	37	45.1
Married	45	54.1

Table 2: Association of gender with characteristic of hanging among post-hanging survivors (n=82)

Variables	Male n (%)	Female n (%)	Total n (%)	<i>P</i>
Place of hanging				
Inside	27 (81.8)	45 (91.8)	72 (87.8)	0.191*
Outside	6 (18.2)	4 (8.2)	10 (12.2)	
Calendar year				
1 st quarter	12 (36.4)	10 (20.4)	22 (26.8)	0.194
2 nd quarter	8 (24.2)	21 (42.9)	29 (35.4)	
3 rd quarter	10 (30.3)	11 (22.4)	21 (25.6)	
4 th quarter	3 (9.1)	7 (14.3)	10 (12.2)	
Time of day				
3 am up to 9 am	7 (21.2)	13 (26.5)	20 (24.4)	0.450
9 am up to 3 pm	10 (30.3)	20 (40.8)	30 (36.6)	
3 pm up to 9 pm	9 (27.3)	11 (22.4)	20 (24.4)	
9 pm up to 3 am	7 (21.2)	5 (10.2)	12 (14.6)	
Material used in ligature				
Clothes	22 (66.7)	31 (63.2)	53 (64.6)	0.012
Rope	11 (27.3)	18 (36.7)	29 (32.9)	
Cause of hanging				
Family problem	27 (81.8)	36 (73.5)	63 (76.8)	0.600*
Incurable disease	4 (12.1)	7 (14.3)	11 (13.4)	
Failing in love/exam	2 (6.1)	6 (12.2)	6 (7.3)	
Type of hanging				
Partial	13 (39.4)	28 (57.1)	41 (50.0)	0.115
Complete	20 (60.6)	21 (42.9)	41 (50.0)	

was statistically significant ($P = 0.008$). Females in rural areas and males from urban areas attempted suicide by hanging in significantly higher proportions ($P = 0.041$). There was no association of gender with religion, socio-economic status, education, and marital status [Table 3].

Less than one-tenth (7.3%) of the subject had a psychiatric illness and received treatment. A history of suicidal attempts was observed in 8.5% of cases. About 16% of the victims had consumed alcohol prior to attempted suicide. About three-fourths of the subjects (74.38%) were rescued within 3 minutes, and almost all (98.77%) within 5 minutes of an attempt to end life.

Discussions

Suicide is a major public health issue in the world and especially in developing countries like India. It is often impulsive, compelling a person to end all his sorrows and tension at once by choosing the path of suicide. The exact etiology of suicide is ill-understood, and methods adopted by victims for suicide also vary widely across the globe.^[3] Hanging is one of the most commonly used methods for suicide worldwide.^[4]

In our study, we came across a lot of precipitating factors, which are directly or indirectly found to be responsible for committing suicide. Maximum (47.5%) cases were found in the age group 21–30 years. This could be due to failure to cope with the stressful situation of life at a younger age. The previous studies also support this finding and suggest that because of less practical experience in life, young people are more prone to get upset by the turbulence of life. They opt for deliberate self-harm

over trivial issues and make non-fatal suicidal attempts where the actual intention to kill may be lacking.^[3,5,6]

In developing countries, males prefer to go outside for employment to bear the family's financial burden, while females engage themselves in household work. Because of this, females developed more social bondage with family members. Sometimes increased burden of motherhood due to cultural norms and stigma attached to infertility in females, in addition to the less expressive nature of females, accounts for an increased rate of suicide among females than males. In our study, the gender distribution reveals females (59.76%) outnumbered males (40.24%), bearing a female-to-male ratio of 1.4:1. This is consistent with the universally observed norm and observations by many authors in their research that male is more determined to commit suicide successfully. In contrast, female is better known for their non-fatal, unsuccessful attempts.^[7-12]

Our study reveals that people residing in rural (87.8%) with low education attempted suicide more often. The possible reason for all this could be that most people in Orissa live in rural areas. Poverty, illiteracy, and unemployment are key factors in rural areas that compel a person to commit suicide when demands are not fulfilled. In addition to, victims with lower education may have less judgmental capacity to deal with the problematic situation in life. The similar finding was observed in a study conducted in a rural set up.^[13] In India, education, occupation, and income are assessed as the person's socio-economic status. People from low socio-economic backgrounds (67.1%) are a more vulnerable group in society to commit suicide, as observed in our study. The reasons behind this type of offense are financial hardship, changes in the lifestyle in rural areas, and failure to comply with the need for dependents among people of low socio-economic status. The above findings are consistent with the observations in the previous studies.^[12-14]

Unemployment is a key risk factor for committing suicide as it is directly related to the socio-economic status of the person. A person who is unemployed and illiterate/low educated belongs to low socio-economic categories and commits suicide more often. Again marriage further worsens the socio-economic status of an unemployed person as the dependency ratio in the family is increased. Marriage may be another risk factor, as suicide was more seen in young age marriage, early pregnancy, and failure to take responsibility for the family at an early age. In this stage, the authors want to point out that all the risks mentioned above are interlinked and are the potential risk factors among the rural people that propel a person to commit suicide. So interventions should be applied in this stage to decrease the incidence of suicide among the rural population.

Many authors suggested that victims prefer an indoor place for committing suicide. Our finding is also consistent with them. The reasons for choosing indoors as a suitable site may be due to readily available platforms, ligature material, lonely places, and non-interference by the public. The authors observed that

Table 3: Association of gender with socio-demographic factors of post-hanging survivor (n=82)

Variable	Male n (%)	Female n (%)	P
Age (in years)			
≤20	2 (11.1)	16 (88.9)	0.008
21-30	15 (41.7)	21 (58.3)	
31-40	11 (68.8)	5 (31.2)	
>40	5 (41.7)	7 (58.3)	
Residence			
Urban	7 (70.0)	3 (30.0)	0.041
Rural	26 (36.1)	46 (63.9)	
Religion			
Hindu	33 (41.8)	46 (58.2)	0.270*
Muslim	0 (0)	3 (100.0)	
Socio-economic status [#]			
Middle	14 (51.9)	13 (48.1)	0.133
Low	19 (34.5)	36 (65.5)	
Education			
Illiterate	6 (46.2)	7 (53.8)	0.300
Primary	8 (28.6)	20 (71.4)	
Secondary and above	19 (46.3)	22 (53.7)	
Marital status			
Married	18 (40.0)	27 (60.0)	0.960
Unmarried	15 (45.5)	22 (59.5)	

*Fisher's exact test; [#]since only one post-hanging survivor belonged to high SES, it was merged with middle SES for this analysis

attempted hanging increased from April to June in a year. The peak incidence of suicide occurred in April and June, as observed in the study by Saeed A *et al.* and Kanchan T, respectively.^[15,16]

A Pretia and P. Miottab observed from their study in Italy that the incidence of suicide peaked in the morning, i.e., 8 AM to 11 AM.^[17] 72% of males committed suicide at night, as suggested by Bastia B K.^[18] But observed that peak incidence occurred during day time, i.e., 9 AM to 3 PM. This finding is consistent with the study by N. VijayaKumari, who reported that 50.8% of suicide occurred from 3 AM to 12 noon.^[1] The possible reason is that the females outnumbered the males in our study. Females, especially homemakers, find appropriate times to commit suicide when their husbands go to work and the children go to school, and they find a lonely environment.

About three-fourths of the subjects were rescued within 3 minutes, indicating that the increased chances of survival are more for the individual who rescues as soon as possible following the attempt. Victims of hanging die within 3–5 minutes, as stated by Fremington K.M *et al.*, which is consistent with our findings.^[19] However, Gunnell D *et al.* observed that survival following an attempt is possible even if the victim has been suspended for more than 5 minutes.^[4] Due to readily available, clothes and rope are the commonly used ligature material by the victims.

8.5% of survivors had a history of suicidal attempts by other methods. This finding is consistent with the study by Arun M *et al.* and Sharma *et al.*^[3,20] Multiple attempters reported having chronic symptoms, poor coping skills, a family history of suicidal behavior, substance abuse, and less impulsiveness.^[21] Proper psychiatric evaluation and early intervention were necessary for the survivor groups as the risk of committing suicide was more significant in the attempters without psychiatric illness.^[13] Our study reported that 7.3% of survivors had a history of psychiatric illness with or without regular treatment. Low scoring in both past H/O suicidal attempt and psychiatric illness in our study may be due to the lack of an effective registration system in a rural area of Orissa and non-reporting by people as they thought these as social stigmas. The association between substance abuse and suicidality is well known. In our study, 15.9% of survivors had a history of intoxication either by alcohol or drugs.

Conclusion

Hanging is the most common method of suicide in India, and suicide is a significant public health issue in the world, especially in developing countries. The victim wants to end his tension and sorrow at once by choosing the path of suicide by hanging. The psychodynamic factor compelling a person to end his life remains unfolded unless he leaves some documents like a suicide note, messages, and emails. In the present scenario, most people commit suicide at a younger age due to failure to cope with the stress or situation. The most common reason for attempted suicide by hanging was family-related issues. Early intervention

in family disputes in developing countries, especially in younger individuals, may help curb suicide. As primary care physicians are the first responder to any emergency cases including attempted suicide, the data presented in our study might help them to evaluate the situation carefully and thoroughly.

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Conflicts of interest

There are no conflicts of interest.

References

1. N. Vijayakumari. Suicidal hanging: A prospective study. *JIAFM*.2011;33:353-5.
2. Mangal A, Kumar V, Panesar S, Talwar R, Raut D, Singh S. Updated BG Prasad socioeconomic classification, 2014: A commentary. *Indian J Public Health* 2015;59:42-4.
3. Arun M, Yoganarasimha K, Kar N, Palimar V, Mohanty MK. A comparative analysis of suicide and parasuicide. *Med Sci Law* 2007;47:335-40.
4. Gunnell D, Bennewith O, Hawton K, Simkin S, Kapur N. The epidemiology and prevention of suicide by hanging: A systematic review. *Int J Epidemiol* 2005;34:433-42.
5. Retterstol N. Introduction and definitions. In: Retterstol N (Ed) *suicide - A European perspective*; 4th edition, Cambridge: Cambridge University Press; 1993. p. 9-20.
6. Bhagavath P, Monteiro FN, Gnanadev NC. Epidemiology of Intentional Self Poisoning. *Medico-Legal Update* 2012;12:52-4.
7. Blumenthal SJ. Youth suicide: Risk factors, assessment, and treatment of adolescent and young adult suicidal patients. *Psychiatr Clin North Am* 1990;13:511-56.
8. Tüzün B, Polat O, Vatansever S, Elmas I. Questioning the psycho-socio-cultural factors that contribute to the cases of suicide attempts: An investigation. *Forensic Sci Int* 2000;113:297-301.
9. Bhatia MS, Aggarwal NK, Aggarwal BB. Psychosocial profile of suicide ideators, attempters and completers in India. *Int J Soc Psychiatry* 2000;46:155-63.
10. Wunderlich U, Bronisch T, Wittchen HU, Carter R. Gender differences in adolescents and young adults with suicidal behaviour. *Acta Psychiatr Scand* 2001;104:332-9.
11. Abraham VJ, Abraham S, Jacob KS. Suicide in the elderly in Kaniyambadi block, Tamil Nadu, South India. *Int J Geriatr Psychiatry* 2005;20:953-5.
12. Arun M, Yoganarasimha K, Palimar V, Kar N, Mohanty MK. Parasuicide - An approach to the profile of victims. *JIAFM* 2004;26:58-61.
13. Kar N. Profile of risk factors associated with suicide attempts: A study from Orissa, India. *Indian J Psychiatry* 2010;52:48-56.
14. Elfawal MA, Awad OA. Deaths from hanging in the eastern province of Saudi Arabia. *Med Sci Law* 1994;34:307-12.
15. Saeed A, Bashir MZ, Khan D, Iqbal J, Raja KS, Rehman A. Epidemiology of suicide in Faisalabad. *J Ayub Med Coll Abbottabad* 2002;14:34-7.
16. Kanchan T. Day, week and month of suicide by hanging. *JIAFM* 2008;30:202-6.

17. Preti A, Miotto P. Diurnal variations in suicide by age and gender in Italy. *J Affect Disord* 2001;65:253-61.
18. Bastia BK, Kar N. A psychological autopsy study of suicidal hanging from Cuttack, India: Focus on stressful life situations. *Arch Suicide Res* 2009;13:100-4.
19. Marak FK, Balaraman R. Delayed death in hanging - A case report. *JIAFM* 2008;30:149-50.
20. Sharma BR, Harish D, Sharma A, Sharma S, Singh H. Injuries to neck structures in deaths due to constriction of neck, with a special reference to hanging. *J Forensic Leg Med* 2008;15:298-305.
21. Reynolds P, Eaton P. Multiple attempters of suicide presenting at an emergency department. *Can J Psychiatry* 1986;31:328-30.

Questionnaire

Part – A (Demographic Details)

1. Date and time of examination:
2. Ward:
3. Address:
4. Mobile number:
5. Age:
6. Sex: M/F
7. Religion: Hindu/Muslim/Christian/Others
8. Marital status: Married/Unmarried
9. Socio-economic status: Upper/Middle/Lower
10. Resident: Urban/Rural
11. Education: Illiterate/Primary/Secondary/Higher secondary/
Graduate/Post-graduate
12. Occupation: Housewife/Student/Employed/Laborer/Official/
Business/Unemployed/Others

Question	Response
Place of occurrence	Indoor/Outdoor
Door	Locked from inside/Not Locked
Probable cause	Torture/Family problem/Depression/Failure in affair/Monetary issues/Others
Precipitating factor	
Suicide note	Yes/No
Date and time of act	
Time between incidence and rescue	
Knot position	Typical/Atypical
Ligature material	Saree/Dupatta/Dhoti/Lungi/Gamucha/Rope/Wire/Others
Height of suspension	
Presence of platform	Yes/No; If yes –
Sequalae or complication (if any)	Hypoxic Ischemic Encephalopathy (HIE)/# cervical spine/paralysis of limbs/ any other specific complication
Any relation to dowry	Yes/No
H/O intoxication	Drugs/Alcohol/Smoking
H/O convulsion post-hanging	Yes/No
Conscious level	Conscious/Irritable/Drowsy/Stupor/Coma
Oriented to time, place, person	Yes/No
Cyanosis	Not present/Lip/Fingertip/Nail bed/Nose tip/Ear lobule
Subconjunctival hemorrhage	Yes/No
Site of Petechial hemorrhage	Conjunctiva/Face/Neck/Chest/Any other sites
Tongue bite	Present/Absent
Any discharges from orifices	Dribbling of saliva/Frothy/Bloody/Seminal/Fecal –
Type of hanging	Complete/Partial (any part touching ground)
Ligature mark around the neck	Present or Absent
Direction of ligature mark –	Oblique/Transverse/Undetermined
Pattern of ligature mark –	Imprint/No imprint
Ligature Mark continuity –	Continuous/Discontinuous
Previous H/O Psychiatric illness	Yes/No
Previous suicide attempt	Yes/No
Any other relevant information	