

Suicidal Hanging: A Taboo

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Abstract

Introduction: Suicidal hanging is defined as a form of asphyxial death produced by the body being self-suspended by a ligature material around the neck, with the body's weight serving as the compression force around the neck. The most common method of self-suspension involves attaching the suspending material to a high point and the lower end may be formed into a fixed loop or running knot and is placed around the neck.

Materials and Methods: Data of postmortem examination during period of 3 years were analysed retrospectively. Out of these total 3325 autopsies, 204 cases were found to be of hanging-suicidal cases. Cases were classified according to their age groups, gender, marital status, type of ligature material used and reason for committing suicide etc.

Results: Out of total 204 deaths, 71% deaths due to hanging were seen in males. Nearly half of deaths (48.0%) belong to age group of 30-39 years. Majority (61.3%) deceased persons were married. About 46.6% had used the dupatta for committing the event which was followed by saari, nylon wire, ropes, lungi and others as a tool. Half of suicide (50.0%) was carried out due to the social issues. Pattern found of having bruises in 25.5% deaths.

Conclusion: This study reported 6.1% prevalence of suicidal hanging. Suicidal hanging was more common in the male population and among married young adults. Dupatta was a common ligature material. One of the leading reasons of suicide is social issue.

Keywords: Death, Dupatta, Male, Social issue, Suicidal hanging,

Introduction

Suicide is a serious public health concern and a leading cause of death worldwide.^{1,2} Suicide was most commonly committed by hanging (57.8%), poisoning (25.0%), drowning (5.2%), and burning (3.0%).³ In developing countries like India, hanging is the most common method of suicide.⁴

Suicidal hanging is defined as a form of asphyxia death produced by the body being self-suspended by a ligature material around the neck, with the body's weight serving as the compression force around the neck. Usually, rope or readily accessible clothing serves as the ligature material. The hanging may cause death by various processes that function

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separately or in combination. These include spinal cord injury, venous and arterial blockage, airway obstruction, carotid complex compression resulting in reflex cardiac arrest, and so on.⁵

The most common method of self-suspension involves attaching the suspending material (rope, string, sari, chunni, wearing apparel, etc.) to a high point such as fan or ceiling beam, etc., and the lower end may be formed into a fixed loop or running knot and is placed around the neck.⁶

Materials and Methods

The present observational study was conducted in a tertiary health centre in Ahmedabad, Gujarat. The data of the cases, brought to mortuary of VS General Hospital, Smt. NHL Municipal Medical College, Ahmedabad in department of forensic medicine and toxicology for medico-legal post mortem examination during period of January 2015 to December 2017 (total 3 years) were analysed retrospectively. Total 1242 autopsies were performed in year 2015, 1042 in 2016 and 1041 in 2017 and out of these total 3325 autopsies 204 cases were found to be of hanging-suicidal cases. Cases were classified according to their age groups, gender, marital status, type of ligature material used and reason for committing suicide etc. Reason for

committing suicide was determined after autopsy examination and meticulously done investigation on police part.

Statistical analysis: The collected data was analysed with micro soft excel and results were presented as frequency and percentage in figures and tables.

Results

Table 1: Year wise distribution of total deaths and deaths due to hanging

Year	Total deaths	Total numbers of deaths due to hanging	Percentage (%)
2015	1242	22	1.8 %
2016	1042	81	7.8 %
2017	1041	101	9.8 %
Total	3325	204	6.1 %

Table 1 shows the year wise distribution of total suicidal deaths along with the total numbers of deaths due to hanging. Out of total 3325 deaths, around 204 deaths were found due to hanging. so total 6.1% of total suicidal deaths were observed through suicide by hanging method.

Table 2: Gender wise distribution of deaths due to hanging (n=204)

Gender	2015	2016	2017	Total
Male	13 (59%)	62 (76%)	70 (69%)	145 (71%)
Female	9 (41%)	19 (24%)	31 (31%)	59 (29%)
Total	22 (100%)	81 (100%)	101 (100%)	204 (100%)

Gender wise distribution of deaths by hanging methods in three consecutive years is displayed in Table 2. Male predominance is observed in every

year in given table. Out of total 204 deaths, 71% deaths (145 deaths) due to hanging was seen in males as compared to females death which was around 29%.

Table 3: Age group wise distribution of deaths due to hanging in three years

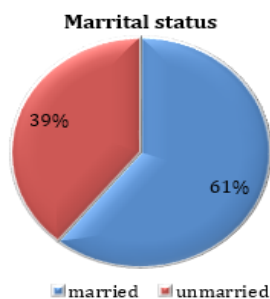
Age group	2015	2016	2017	Total
0-9	0 (0%)	0 (0%)	0 (0%)	0 (0%)
10-19	3 (13.6%)	22 (27.2%)	8 (7.9%)	33 (16.2%)
20-29	8 (36.4%)	34 (42%)	31 (30.7%)	73 (35.8%)
30-39	11 (50%)	25 (30.9%)	62 (61.4%)	98 (48.0%)
Total	22 (100%)	81 (100%)	101 (100%)	204 (100%)

Out of total 204 deaths due to suicide by hanging methods, 48.0% of deaths belong to age group of 30-39 years followed by 35.8% of deaths in 20-29 years of

age group and then age group of 10-19 years is seen which had a proportion of 16.2% of total deaths due to hanging methods.

Table 4: Marital status among the total suicidal deaths committed through hanging (n= 204)

Year	2015	2016	2017	Total
Married	14 (63.6%)	49 (60.5%)	62 (61.4%)	125 (61.3%)
Unmarried	8 (36.4%)	32 (39.5%)	39 (38.6%)	79 (38.7%)
Total	22 (100%)	81 (100%)	101 (100%)	204 (100%)

**Figure 1: Distribution of deaths according to their marital status**

Majority of around 125 (61.3%) deceased persons were married, while 79 (38.7%) were unmarried out of total 204 deaths is shown in Figure 1.

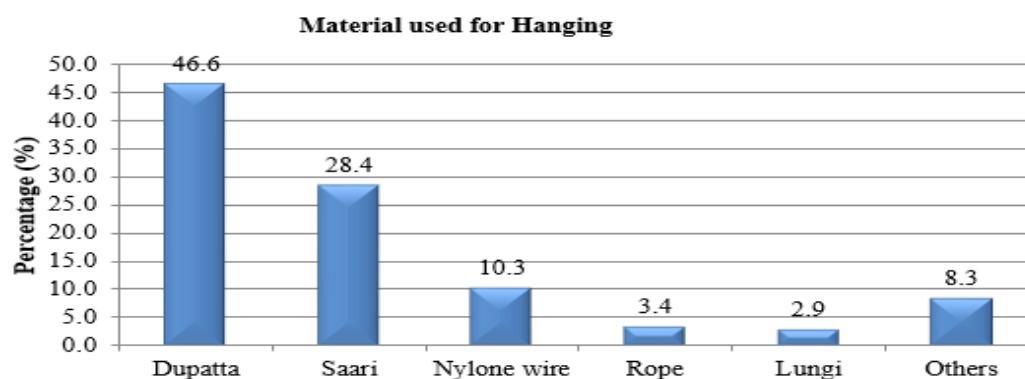
**Figure 2: Material used for hanging methods (N=204)**

Figure 2 shows the materials used by the deceased persons to execute the suicide by hanging methods. Among total incidence carried out by deceased person, Majority of around 46.6% had

used the dupatta for committing the event which was followed by saari, nylon, wire, ropes, lungi and others as tools.

Table 4: Aggravated factors for the event of suicide

Reason	2015	2016	2017	Total
Social issues	2 (9.1%)	41 (50.6%)	60 (59.4%)	103 (50.5%)
Love failure	6 (27.3%)	16 (19.8%)	20 (19.8%)	42 (20.6%)
Financial loss	12 (54.5%)	14 (17.3%)	4 (4%)	30 (14.7%)
Exam failure	2 (9.1%)	10 (12.3%)	17 (16.8%)	29 (14.2%)
Total	22 (100%)	81 (100%)	101 (100%)	204 (100%)

Table 4 shows the maximum numbers of suicide committed in year of 2017 followed by year of 2016

and then 2015 year. Majority of around 50% of suicide was carried out due to the social issues which led

them to committing suicide. Failure in love and exam also contributed 21 % and 14% respectively. While

nearly 15% of deaths were carried out because of the financial loss in their life.

Table 5: Thickness and appearance of the ligature mark

	2015	2016	2017	Total
Thickness				
- Thin	4 (18.2%)	12 (14.8%)	14 (13.9%)	30 (14.7%)
- Thick	4 (18.2%)	25 (30.9%)	54 (53.5%)	83 (40.7%)
- Faint	14 (63.6%)	44 (54.3%)	33 (32.7%)	91 (44.6%)
Appearance				
- Faint	17 (77.3%)	56 (69.1%)	80 (79.2%)	153 (75%)
- Deep	5 (22.7%)	25 (30.9%)	21 (20.8%)	51 (25%)

Table 6: The knot position and direction of ligature mark due to hanging

	2015	2016	2017	Total
Pattern				
Bruised	4 (18.2%)	12 (14.8%)	36 (35.6%)	52 (25.5%)
Abraded	1 (4.5%)	7 (8.6%)	12 (11.9%)	20 (9.8%)
No marks	17 (77.3%)	62 (76.5%)	53 (52.5%)	132 (64.7%)
Direction of ligature mark				
Oblique	16 (72.7%)	47 (58%)	79 (78.2%)	142 (69.6%)
Straight	4 (18.2%)	12 (14.8%)	11 (10.9%)	27 (13.2%)
Irregular	2 (9.1%)	22 (27.2%)	11 (10.9%)	35 (17.2%)
Knot position				
Occiput	17 (77.3%)	33 (40.7%)	78 (77.2%)	128 (62.7%)
Below mandible	5 (22.7%)	48 (59.3%)	23 (22.8%)	76 (37.3%)
Total	22 (100%)	81 (100%)	101 (100%)	204 (100%)

Table 6 shows the knot position and direction of ligature mark due to hanging. In around 128 (62.7%) cases of hanging, the knot position was at occiput level while, around in 76 (37.3%) deaths, it was below mandible were observed. Pattern found of having bruises in total 52 (25.5%) deaths, while in 132(64.7%) events of deaths, there wasn't any pattern observed. Around in 20 (9.8%) suicidal deaths through hanging, we found abrasions. In majority of (142, 69.6%) deaths, due to hanging, the direction of ligature mark was found in oblique direction followed by directions of irregular (35, 17.2%) and straight (27, 13.2%) was found.

Discussion

In our study, male preponderance was observed in case of suicidal deaths due to hanging, which also supports the results of study of Kumar TM et al.⁷

also revealed the males outnumbered females in the study, which might be explained by the fact that men face greater external challenges, such as higher stress levels and financial obligations. Other researchers' findings concur with our conclusion. Another study carried out by Elfawal MA et al.⁸ also showed the similar result suggesting the higher male preference over female deaths. This study also shows the male-to-female ratio was 4.5:1. Another study carried out by SonawaneSS et al.⁹ suggested the similar results of predominance of male victims(59.64%) observed over female victims account for 40.36%.⁹

In our study, the majority of deaths were found in the age group of 30-39 years of age group followed by age group of 20-29years and then 10-19 years of age of having 40% and 17% respectively. Elfawal MA et al.⁸ study also found the similar results which shows the

highest suicide rate was among the age group from 30 to 39 years (44.3%), followed by the age group from 20 to 29 years (32.6%), and the lowest suicide rate was among the age group <20 years (1.8%). The rate in the group >60 years was also low (3.2%).

Around 61 % of deceased persons were married in our study, which also favours the results of Mohanty S et al.¹⁰ Majority of the victims were mentally sound, married and were from rural background. Victims were mostly drawn from low socioeconomic status (48%). Most commonly used ligature was found dupatta in this study. This result also found similar to the results of Sonawane SS et al.⁹ which shows the most common ligature material used for the hanging was a dupatta (46.5%). These findings are also consistent with Rao D study which mentioned the most common ligature material was the dupatta followed by the sari.¹¹ Patel AP et al.¹² study found that the most common ligature material used was dupatta followed by the bed sheet. Our study shows the social issue was the main reason to commit suicide. Around 50% of deaths were happened due to this reason followed by the reason of failure in love which covers the proportion of 21% followed by financial loss (15%) and exam failure (14%) which slightly contradicts the results of Mohanty S et al.¹⁰ showing the Financial burden (37%) and marital disharmony (35%) were the principal reasons for the suicide.

Limitation

This study is done at only in single centre of Ahmedabad region of Gujarat so the data collection was done in limited data and limited time period.

Conclusion

Out of total 3325 deaths, around 204 deaths are found due to hanging. So total 6.1 % of total suicidal deaths were observed through suicide by hanging method. Male preponderance (71%) was observed over female which was about 29%. 52% of deaths were belongs to age group of 30-39 years followed by 40% of deaths in 20-29 years of age group. About 61% deceased persons were married, while 39% were unmarried. Most commonly used ligature material was dupatta followed by sari in the study.

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Conflict of interest: None

Ethical approval: The study was approved by the Institutional Ethics Committee.

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