

SOCIO-DEMOGRAPHIC PROFILE OF HANGING CASES AT NEW CIVIL HOSPITAL, SURAT

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ABSTRACT

Background: Violent asphyxial deaths are one of the important causes of death nowadays. For reasons not known to others, victims end their life by committing suicide. Hanging is one of the preferred mode of committing suicide, as it supposedly produces painless death as compared to others modes of suicide, and also because it produces instantaneous death. The present study is for looking into demographic profile of the victims of hanging for studying the predisposing factors, and to take preventing measures.

Aims & Objectives: To analyze various demographic and social aspects of hanging.

Materials and Methods: A profile of 87 cases of death due to hanging in the present prospective study was done at FMTD, GMC and NCH, Surat, between October 2011 and September 2013. The observations of the study were compared with previous studies.

Results: In the present study, the incidence rate of hanging cases was 2.20%. The major age group involved was 21 to 30 years. Majority of hanging cases were found in males. Incidence of hanging was recorded high in married females compared to married males. Majority of victims chose home to end their lives. Majority of the persons were non migrant in this study. Majority of victims had gained education more than secondary level. In most of the cases, total monthly income of family was less than 10,000. The most common ligature material used was dupatta.

Conclusion: Hanging among male is more common than female. Married persons have more incidence of hanging. Hanging is more common in less educated persons. Low income is a risk factor for hanging. Persons prefer home for hanging over other places. Persons prefer soft, easily available material for hanging. So by identifying these risk factors we can initiate appropriate steps to reduce deaths due to hanging.

Key Words: Hanging; Marital Status; Income; Education; Place; Ligature Material

Introduction

Violent asphyxial deaths are one of the most important cause for unnatural deaths occurring nowadays. V kumar^[1] quoted that 71% of suicides in India are by the persons below the age of 44 years, especially among young adults. Amongst them, hanging is commonly encountered in day to day autopsy. Incidence of these types of deaths were found different from place to place, and necessitate to take up similar studies at different geographical areas. It has been shown that deaths due to hanging are common mode of suicide in all over India. Hanging is the form of asphyxia caused by suspension of the body by ligature material, while constricting force being weight of the body. In complete hanging, whole body is suspended from the ground, while in partial hanging a part of the body touches the ground.

Materials and Methods

All cases of hanging brought to autopsy at New civil hospital between October 2011 to September 2013 were included in the present study. During this time

period, a total of 3942 autopsies were conducted at New civil hospital, Surat. Detailed history regarding age, sex, marital status, migration status, educational qualification, total monthly family income, ligature material used, place of hanging etc. was collected from nearest relative, police and other records.

The collected data was summarized and compared with previous studies. For studying age, groups of 10 years were made. Ligature materials used for hanging were divided in to two groups - soft material and hard material - according to its smoothness and softness. In soft material, dupatta, lungi, saree, cotton cloth, cotton thread, gamchha (soft towel-like cloth) etc. were included. In hard material, metal wire, muffler, nadu (fastening string of pyjama etc.), nylon rope, paghadi (turban), and towel were included. In present study, total monthly family income was noted, and relation of hanging with monthly family income was studied (Income of 4 cases was not available). Two groups were made - those whose monthly family income up to ₹ 10,000, and those whose monthly family income was more than ₹ 10,000.

Results

Amongst total 87 cases of hanging, 55 (63%) were male and 32 (37%) were female. Maximum number of cases, 39 (45%), were reported in the age group of 21 to 30 year. Among them, 20 (51%) were males, and 19 (49%) were females. This age group was followed by age group of 11 to 20 years, (20%) and then age group of 31 to 40 (18%) years. Marital status of 3 cases could not be ascertained. Among rest 84, total 57 (68%) were married, from them 31 were males and 26 were females. From 87 hanging cases, 78 (90%) chose home for hanging, whereas rest 9 (10%) chose places other than home. Places other than home included farm, beach side, river bridge, police station, work place and tree. Among 55 males, 48 (87%) chose home for hanging, whereas 30 (94%) out of 32 females choose home. Among total 87 deaths, 29 (33%) were migrants and 58 (67%) were non migrant - as per record.

Table-1: Distribution according to age and gender

Age group (Years)	Male	Female	Total
1 to 10	0 (0%)	0 (0%)	0 (0%)
11 to 20	11 (20%)	6 (19%)	17 (20%)
21 to 30	20 (36%)	19 (60%)	39 (45%)
31 to 40	13 (24%)	3 (9%)	16 (18%)
41 to 50	8 (15%)	2 (6%)	10 (12%)
51 to 60	2 (3%)	1 (3%)	3 (3%)
61 to 70	1 (2%)	0 (0%)	1 (1%)
>70	0 (0%)	1 (3%)	1 (1%)
Total	55 (100%)	32 (100%)	87 (100%)

Table-2: Distribution according to marital status

Marital status	Married	Unmarried	Total
Male	31 (59.6%)	21 (40.4%)	52 (100%)
Female	26 (81.3%)	6 (18.7%)	32 (100%)
Total	57 (66%)	27 (34%)	84 (100%)

Table-3: Distribution according to place

Gender	Home	Outside	Total
Male	48 (87%)	7 (13%)	55 (100%)
Female	30 (94%)	2 (6%)	32 (100%)
Total	78 (90%)	9 (10%)	87 (100%)

Table-4: Distribution according to migrant status

Migrant status	Hanging
Migrant	29 (33%)
Non migrant	58 (67%)
Total	87 (100%)

Table-5: Distribution according to education status

Education status	Hanging
Illiterate	0 (0%)
Primary	16 (18%)
Secondary	45 (52%)
Graduate	23 (26%)
Post graduate	1 (1%)
Not available	2 (2%)
Total	87 (100%)

Among 87 hanging cases, only one person was post graduate, 23 (26%) were graduate, 45 (52%) had

education up to secondary level, 16 (18%) had up to primary level and no one was illiterate. Monthly income of 56 (64%) persons was less than 10000, whereas 28(32%) persons monthly income was more than Rs.10000. Among 55 male hanging cases, most commonly used material was dupatta in 16 (29%) cases, followed by nylon rope in 11 (20%) cases and saree in 10 (18.25%) cases. Whereas from 32 female, hanging cases most frequently used material was dupatta in 20 (62.5%) cases, followed by saree in 7 (21.8%) cases. Overall, dupatta (41.4%) was used most frequently followed by saree (19.5%) and nylon rope in 15 (17.2%) cases. For hanging, 37 (57%) males used soft ligature material and 28 (43%) used hard ligature material - whereas, out of 32 females, 28 (87.5%) chose soft ligature material. Overall 65 (74.8%) subjects chose soft ligature material, and only 22 (25%) choose hard ligature material.

Table-6: Distribution according to income

Monthly Income (₹)	Hanging
Up to 10,000	56 (64%)
More than 10,000	28 (32%)
Not available	3 (4%)
Total	87 (100%)

Table-7: Distribution according to gender and ligature material

Ligature Material	Soft	Hard	Total
Male	37 (57%)	28 (43%)	65 (100%)
Female	28 (87.5%)	4 (12.5%)	32 (100%)
Total	65 (74.7%)	22 (25.3%)	87 (100%)

Table-8: Distribution according to ligature material

Ligature material	Male	Female	Total
Cotton cloth	7 (12.7%)	0 (0%)	7 (83%)
Cotton thread	2 (3.6%)	1 (3.1%)	3 (3.4%)
Dupatta	16 (29%)	20 (62.5%)	36 (41.4%)
Gamchha	1 (1.8%)	0 (0%)	1 (1.15%)
Lungi	1 (1.8%)	0 (0%)	1 (1.15%)
Metal wire	1 (1.8%)	0 (0%)	1 (1.15%)
Muffer	1 (1.8%)	0 (0%)	1 (1.15%)
Nadu	1 (1.8%)	0 (0%)	1 (1.15%)
Nylon rope	11 (20%)	4 (12.5%)	15 (17.2%)
Paghadi	1 (1.8%)	0 (0%)	1 (1.15%)
Saree	10 (18.2%)	7 (21.8%)	17 (19.5%)
Towel	3 (5.5%)	0 (0%)	3 (3.45%)
Total	55 (100%)	32 (100%)	87 (100%)

Discussion

Related to Age

In our study, the youngest case of hanging was 13 years old boy and oldest was 75 year old female. Majority of the cases were belonging to the age group 21 to 30 years (39%) which is consistent with other studies done at Kurnool (Andhra Pradesh) by T. Saisudheer and T.V. Nagaraja^[2], Ashok kumar Samanta, Soumya Ranjan Nayak^[3], Momin et al^[4], Sharma et al^[5], Joshi et al^[6], Naik et al^[7], Jani et al^[8] - but in contrast with the study of

Sarangi et al^[9] in which they had found 74.83% cases of hanging in the age group of 31-40 years. Age group of 21-30 years involves maximum number of cases because it is the most active period of one's life. People become violent and arrogant in this age group, and are more vulnerable to the fast changing social trends and cultures, as they are mentally a bit immature with little experience of life, and there is a great fluctuation of emotion in this age group. The influencing factors for this distribution are unemployment, failure in love, marital disharmony, financial problems, dowry harassment etc.

Related to Sex

Among 87 hanging cases, 55 were male and 32 were female, which suggests male predominance. Similar findings were obtained in studies done by Simonsen J^[10], Gupta B.M. and Yadav Anil^[11], Mohammad Ziyuddin and Kamesh Modi^[12]. But T. Saisudheer and T.V. Nagaraja^[2] reported female predominance in their study. Mominet al^[4], Sharma et al^[5], Joshi et al^[6], Jani et al^[8], Sarangi et al^[9] found more number of male cases in their study. Males are more active in various activities and customs, and hence they are vulnerable for more stress and tension. But in the study of Naiket al^[7] female cases accounted for 62.5% - these findings were in contrast with the present study and most of the authors.

Related to Marital Status

Marital status of all female were available but marital status of 3 male was not available. Among 52 male, whose marital status was available, 31 were married (59.6%), whereas among 32 female 26 were married (71.3%). Majority of married males were from age group 31 to 40, while majority of female were from age group 21 to 30. It suggests that marital disharmony was a major factor in female hanging as compared to males and it prompts female for hanging in early married life, which was supported in study done by KhPradipkumar Singh, Aelifeter R Marak, Th Meera.^[13] These observations are consistent with the study of Mominet al^[4] and Jani et al^[8]. This can be explained by early marriages in the Indian community, familial responsibilities, social customs, limited source of income, frustrations, dowry, family quarrels, maladjustment in marriage life, low level of education, infidelity, unemployment etc.

Related to Place of Hanging

In our present study, we observed that among total 87 cases of hanging, home was the place of choice by 78

persons (90%). Among total 9 outside home hanging cases, 7 (78%) were male. This suggests that females chose home for hanging more than male. Similar findings were found in study done by Ashok Kumar Samanta and Soumya Ranjan Nayak.^[3] They observed that 66% males and 80% female chose home for hanging. This is also supported by findings of Kh Pradipkumar Singh, Aelifeter R Marak, Th Meera^[13] and Th. Meera, Singh MB^[14].

Related to Income

We noted that incidences of hanging were more in low income group as compared to high income group. In the study done by T. Saisudheer and T.V. Nagaraja^[2], the incidence of hanging was recorded more common in middle income group - 156 (78%), and next common was lower income group 34 (17%) and least common was higher income group 04 (2%). Similar findings were obtained in the study done by Ashok Kumar Samanta and Soumya Ranjan Nayak.^[3] This supports the low income factor as one of the reason for dissatisfaction and hanging.

Related to Education

In this study from 87 cases, majority have gained education up to secondary level (52%), followed by graduates (26%), and primary level education (18%). None of the persons who have committed suicide were illiterate.

Related to Ligature Material

Overall, for hanging, person chose soft ligature material (74.7%) as compared to hard material (25.3%). The choice of smooth material was more in females (87.5%) as compared to males (57%). In study conducted by T. Saisudheer and T.V. Nagaraja^[2], out of 200 cases of hanging, in 172 cases (86%) the ligature material was soft, in 16 cases (8%) it was firm, in 4 cases (2%) it was hard, and in 08 cases (4%) the nature of ligature material was not known. In a study by Fimate et al^[15], ligature materials commonly used were jute ropes (52.1%) followed by nylon rope (35.8%), cloth (9.4%), etc. On the other hand, Sharma et al^[5] also observed that chunni (30.9%), a variant of dupatta, was the most common ligature material used, followed by nylon rope (18.8%). Similar findings were observed in the study by KhPradipkumar Singh, Aelifeter R Marak, Th Meera^[14], who found that 28.58% of the cases used nylon ropes, while 22.86% used "dupatta/chunni" as ligature material. In study done by Ashok Kumar Samanta and

Soumya Ranjan Nayak^[3], 40.95% of cases had utilized cloth based material, and 46.67% of cases adopted Rope as Ligature material. In the study done by Mohammad Ziyauddin and Kamesh Modi^[12], it was observed that majority of victims, 40 (54.05%), used dupatta followed by nylon rope in 18 (24.32%) cases.

Conclusion

In summary, most vulnerable age group in hanging is that from 21 to 30. Hanging among male is more common than female. Married persons have more incidences of hanging. Married female is more at the risk of hanging than married male. Migration is not a risk factor for hanging. Hanging is more common in less educated persons. Incidences of hanging are more common in lower income group as compared to those who are earning more. Persons prefer home over other outside place for hanging. Persons chose soft materials more than hard material for hanging.

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