

Autopsy Study of Suicides in Adult Females in South Bangalore**Tonse SB¹, Kumar NT², More RM³**¹Assistant Professor, Department of Forensic Medicine & Toxicology, Dr. D.Y. Patil School of Medicine, Dr. D. Y. Patil (Deemed to be) University, Nerul, Sector-7, Navi Mumbai²Professor & Head, Department of Forensic Medicine & Toxicology, Kempegowda Institute of Medical Sciences, Banshankari 2nd stage, Bangalore³Professor, Department of Anatomy, Dr. D. Y. Patil School of Medicine, Dr. D.Y. Patil (Deemed to be) University, Nerul, Sector-7, Navi Mumbai

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Abstract:

Suicide is defined as “Death due to an intentional act or acts of the deceased who anticipates his or her resultant death”. Suicidal deaths among women have been increasing in Indian society and various cultural, religious, and social values have a major role to play. In view of the magnitude and frequency of suicidal deaths among females in south Bangalore and its impact on society, the present study was undertaken. Most of the victims in our study were married and belonged to the age group of 21-30 years. Majority of the women belonged to the lower middle socio-economic class. The highest number of decedents committed suicide due to distress as a result of suffering from chronic illnesses followed by domestic abuse or dowry-related abuse. The preferred method was hanging followed by ingestion of a poison.

Keywords: Suicide, adult females, dowry, medico-legal autopsy, Bangalore city, domestic abuse, Socio-demographic profile.

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Introduction

Suicide is a complex phenomenon that has attracted the attention of philosophers, theologians, physicians and sociologists over the centuries. Shneidman, father of suicidology, defines suicide as: “Suicide is a conscious act of self-induced annihilation, best understood as a multidimensional malaise in a needful individual who defines an issue for which suicide is the best perceived solution[1].”

As per the World Health Organisation, approximately 8,00,000 deaths occur globally each year due to suicide. The annual age-standardized global suicide rate is 10.5 cases per 1,00,000 [2]. Suicide is the most common cause of death among Indian Women ages between 15 and 49 years [3]. The global burden of disease study showed that the suicide death rate in India is higher than expected for its Socio-demographic index level for women [4]. As per the 2016 accident report Karnataka contributed 8.1% to the total cases of suicide in the country and Bangalore city reported 1795 cases in the year 2016[5].

Suicide in women is an indicator of her mental health and well-being in society. Psychiatric ailments are an established cause of suicide in Western countries [6], but in India there are various

cultural factors that come into play. Various cultural, religious, and social values play a big role in this regard such as gender discrimination from prior to birth, patriarchal ecosystem, upheavals post-marriage, dowry demands, pay gap, sexual harassment, and domestic violence. The present study aims at knowing the proportion of suicide in adult females in south Bangalore, which subgroups of the population were most vulnerable to such deaths, and the methods being used. The study also aims to analyze the possible reason for suicide and correlate the same with socio-demographic variation.

Materials and Methods

The present study was conducted from January 2014 to July 2015 in the Department Of Forensic Medicine and Toxicology at Kempegowda Institute of Medical Sciences, Bangalore, Karnataka State India, a tertiary care centre. Using a pre-tested structured schedule, all cases of suicidal and suspected suicidal deaths in females in the age group 18 to 65 years brought to the KIMS Hospital Mortuary, Bangalore for autopsy and those who fulfilled the inclusion and exclusion criteria were selected on a purposive sampling basis. A standardized proforma, specially designed for this purpose was used and filled in each case after

detailed interviews with the investigating officials and the relatives/friends of the deceased and hospital records, etc., to gather information regarding the age, socio-economic background, level of education, occupation, marital status, number of children, any history of domestic abuse or dowry demands, and history of physical/ mental diseases and presence of any other stressors.

The relevant samples/viscera were subjected to chemical analysis on autopsy to establish the poison consumed in suspected cases of poisoning. Suicidal cases in decomposed adult female bodies, unknown or unclaimed female bodies, and in alleged cases which later turned out to be other than suicide were excluded. A total of 126 cases were studied, of which 2 cases were excluded as the bodies were decomposed. So, a total of 124 cases were included in the present study.

Sampling design - Purposive sampling technique

Study design - Descriptive study

Statistical methods involved - The data obtained from this study were analyzed statistically by

presenting the data in the form of appropriate tables and graphs, and computing descriptive statistics like proportions and percentages.

Ethical clearance

The thesis protocol was presented before the Ethical Committee of Kempegowda Institute of Medical Sciences, Bangalore and the actual study started after getting the approval for the same.

Results

The present study was conducted from 1st January 2014 to 30th June 2015 for a period of 18 months, during which 951 medico-legal autopsies were conducted at Kempegowda Institute of Medical Sciences Mortuary, Bangalore. Out of these 951 cases autopsied, 400 were suicidal deaths, out of which 146(36.5%) were females committing suicide and 254 (63.5%) were males. Out of the 146 suicidal deaths in females, 126 of the females committing suicide were in the age group 18 – 60 years and were included, 2 cases were excluded as the bodies were decomposed, therefore a total 124 cases were included in the present study.

Table 1: Socio-demographic profile of adult females committing suicide

Age group (years)	Number (n = 124)		Percentage	
18 – 20	23		18.54	
21- 30	59		47.58	
31-40	25		20.16	
41-50	11		8.87	
51-65	6		4.83	
Marital Status	Number (n = 124)		Percentage	
Married	79		63.7	
Divorced/Separated	7		5.65	
Widowed	5		4.03	
Unmarried	33		26.61	
Religion	Number (n=124)		Percentage	
Hinduism	109		87.90	
Christianity	7		5.65	
Islam	8		6.45	
Literacy	Number (n = 124)		Percentage	
Illiterate	10		8.06	
Completed primary schooling	13		10.48	
Completed middle schooling	27		21.77	
Completed secondary schooling	16		12.90	
Completed junior college	15		12.09	
Completed Graduation	39		31.45	
Completed Post graduation	4		3.22	
Occupation	Number of cases (n=124)		Percentage	
Housewife	71		52.26	
Employed	19		15.32	
Labourer/domestic help	8		6.45	
Student	15		12.10	
Unemployed	11		8.87	
Socio-economic class*	Number of cases (n=124)		Percentage	
Upper (I)	4		3.23	
Middle	Upper Middle (II)	47	80.65	37.90
	Lower Middle (III)	53		42.74

Lower	Upper Lower (IV)	20	14	16.13	11.29
	Lower Lower (V)		6		4.84

The maximum number of decedents were in the age group of 21 -30 accounting for 59 (47.58%) cases followed by the age group 31- 40 years accounting for 25 (20.16%) cases. The least number of cases were in the age group of 51 -65 years where we found 6 cases (4.83%). We also found that women who were married at the time of committing suicide were 79 (63.7%) of the total cases. 33 (26.61%) of the women were unmarried at the time of committing suicide. 7 (5.65%) women were divorced or separated from their husbands and 5 (4.03%) women were widowed at the time of committing suicide. On analysing the religious distribution, we found that majority number of women committing suicide followed Hinduism accounting for 109 (87.90%) cases, followed by women following Islam and Christianity accounting for 8 (6.45%) cases and 7 (5.65%) cases respectively. On analysing the educational status of the victims, it was seen that maximum number of victims have completed their graduation accounting for 39 (31.45%) cases, which was closely followed by victims who have completed their middle schooling which accounted for 27 (21.77%) of the

cases. Least number of victims had completed their post-graduation degree accounting for 4 (3.22%) cases. In the present study it was noted that out of the 4 women who had completed their post-graduation. Women who had completed their primary schooling, secondary schooling and junior college each accounted for 13 (10.48%), 16 (12.90%) and 15 (12.09%) cases respectively. Illiterate women accounted for 10 (8.06%) cases. We also found that most victims were housewives accounting for 71 (52.26%) cases and least of the victims were labourers or domestic help accounting for 8 (6.45%) cases. Those who were employed accounted for 19 (15.32%) cases. Victims who were students at the time of committing suicide accounted for 15 (12.10%) cases and those who were literate but unemployed at the time of committing suicide accounted for 11 (8.87%) cases. The analysis of the socio-economic data, we found that the most vulnerable class for suicidal deaths in women is the middle class, accounting for 100 (80.65%) cases, followed by the lower class which constitutes 20 (16.13%) cases.

Table 2: Distribution of victims based on the method used

Method	Number (n=124)	Percentage
Hanging	99	79.84
Hanging + self-cut-throat	1	00.81
Consumption of poisonous substance	16	12.90
Fall from height	3	2.42
Burns	5	4.03

Table 4 shows that maximum number of decedents chose to commit suicide by hanging which accounted for 99 (79.84%) cases, which was followed by consumption of an unknown poison which accounted for 16 (12.90%) cases. In the

present study, it was found that 5 (4.03%) women chose to burn themselves to commit suicide and 3 (2.42%) chose to jump from a height. In one (0.81%) case the decent chose to incise her throat and hang afterward. (Table 2 and Figure 1)

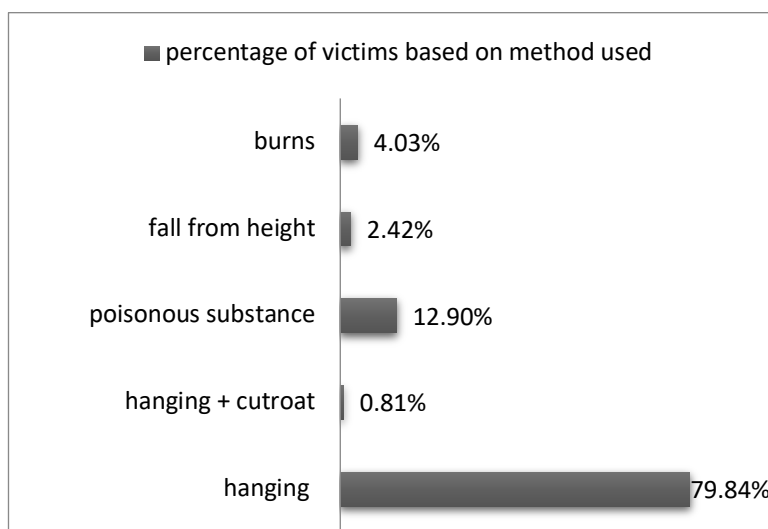


Figure 1: Distribution of victims based on method used

Table 3: Distribution of poisoning victims based on choice of poison consumed

Type of poison consumed		Number (n=16)		Percentage	
Agricultural poisons	Organophosphates	11	5	68.75	31.25
	Aluminium Phosphide		6		37.50
Pharmaceutical drugs	Diazepam tablets	2	1	12.5	6.25
	Succinylcholine preparation		1		6.25
Not detected in the chemical analysis		1		6.25	
Report awaited from chemical analysis		2		12.5	

As per Table 5, among the women who consumed a poison, the preferred poison was Aluminium phosphide which accounted for 6 (37.50%) cases. This was followed by organophosphate pesticide which accounted for 5 (31.25%) cases. In one (6.25%) case the woman had ingested multiple

tablets of diazepam and in one case (6.25%) case the woman had intravenously injected herself with succinylcholine. In one case (6.25%) the chemical analysis was negative. In two cases (12.5%) the poison ingested is not known as the chemical analysis report is awaited. (Table 3 and Figure 2)

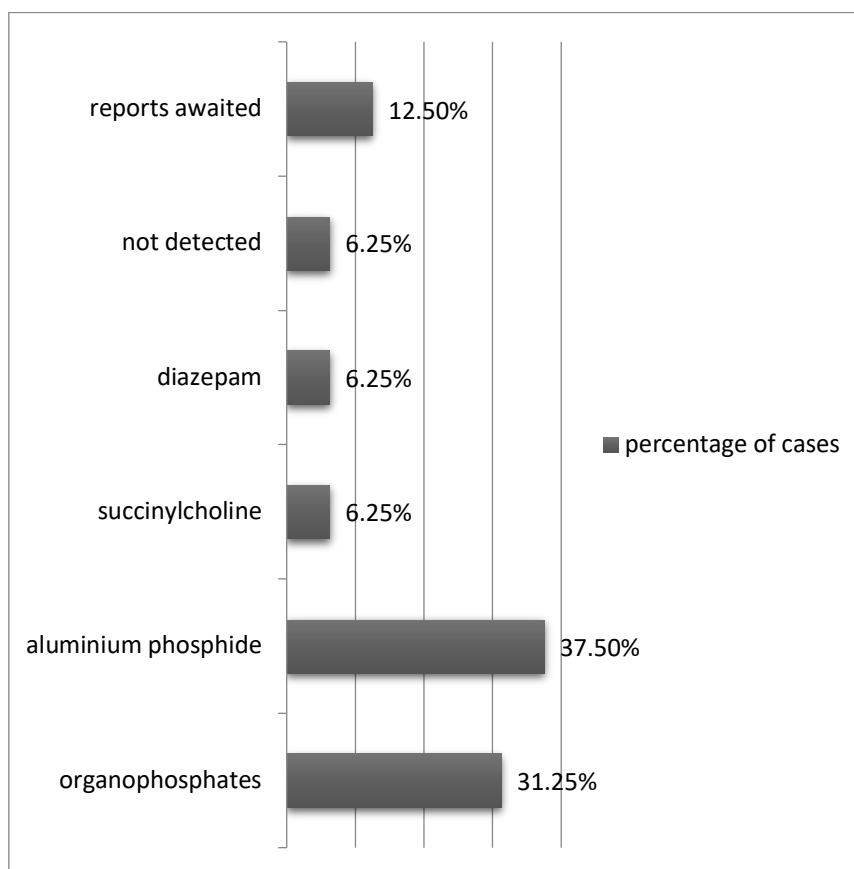


Figure 2: Distribution of poisoning victims based on the choice of poison consumed

Table 4: Distribution of victims based on reason for committing suicide

Reason for committing suicide		Number		Percentage	
Physical and mental torture	For dowry	9	21	7.26	16.93
	For other reasons	12		9.68	
Distress due to Chronic Physical illness	Gynaecological problems	14	22	11.29	17.74
	Surgical diseases	2		1.61	
	Medical diseases	6		4.84	
Psychiatric diseases or depression		18		14.51	
Grief D/T	Ill health of a family member	2	9	1.61	7.26
	loss of spouse/ family member	7		5.65	
Depression/anxiety regarding academics		6		4.84	
Trivial fight with family members/husband		10		8.06	
Sexual harassment / eve teasing		3		2.42	

Financial problems	10	8.06
Love failure	15	12.10
Unknown reason	10	8.06
Total	124	100

The above table shows that the most common cause for suicide in females is distress as a result of suffering from chronic physical illness which were 22 (17.74%) cases, closely followed by the reason being physical and mental torture for dowry and domestic abuse which accounted for 21 (16.93%) cases. Psychiatric disease or depression (for unknown reasons) was the reason for committing suicide in 18 (14.51%) cases. In 15 (12.10%) cases failure of a love relationship or marriage was a reason for which the lady decided to commit suicide. Women who chose to commit suicide as a

result of family problems, financial reasons or in whom reasons were unknown accounted for 10 (8.06%) cases each. Suicide due to grief due to ill health of a family member or due to the loss of her spouse or first-degree relative accounted for 9 (7.26%) cases.

The least common causes for committing suicide were depression/anxiety regarding academics and sexual harassment/eve teasing which had to be tolerated by the decedent, which accounted for 6 (4.84%) and 3(2.42%) cases respectively. (Table 4 and Figure 3)

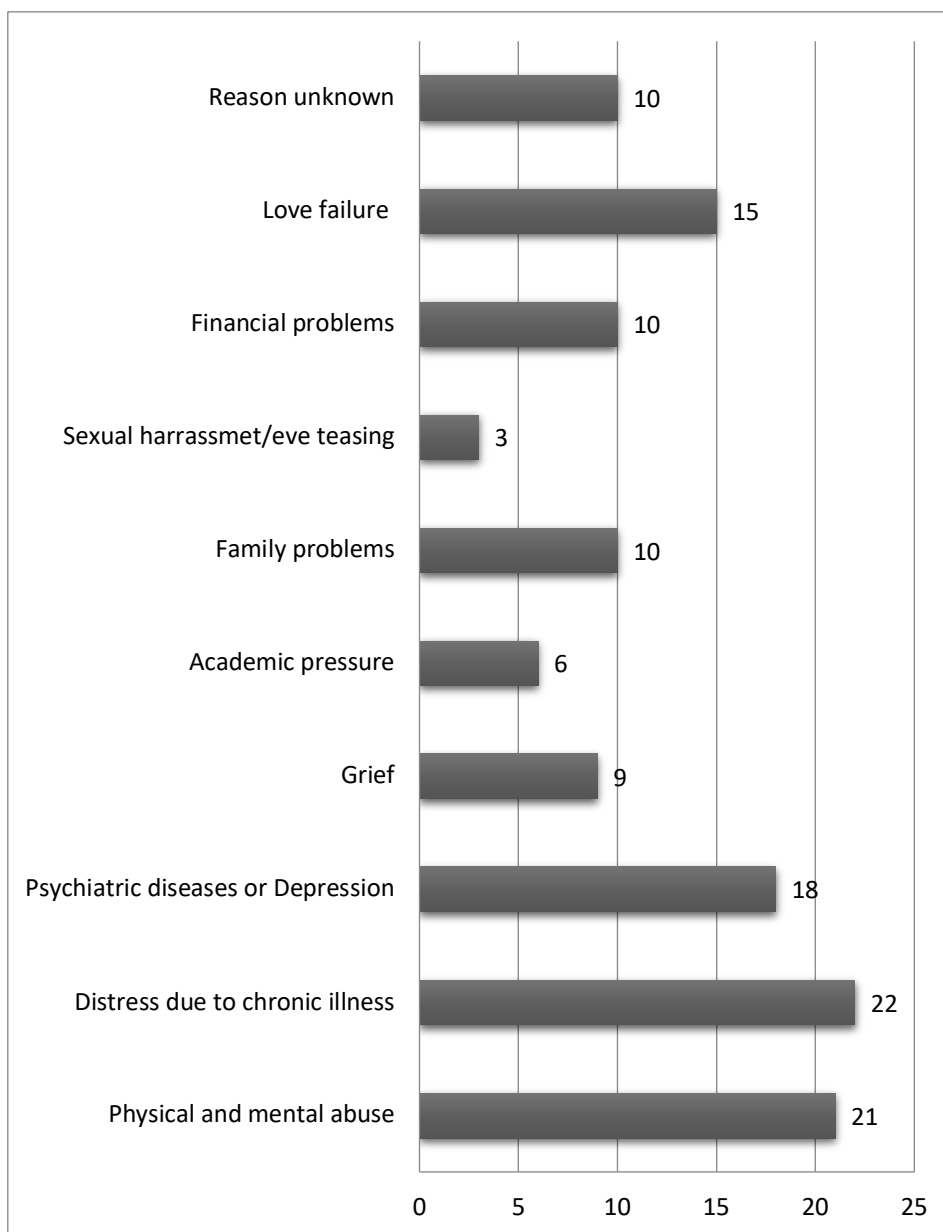


Figure 3: Distribution of victims based on the reason for committing suicide

Discussion

As per table 1, in the present study the highest number of decedents, 59 cases (47.58%) were in the age group of 21-30 years. This was followed by 25 (20.16%) cases in the age group of 31-40 years. Similar findings in relation to age distribution was reported by authors [7-14]. However, Maricik et al[15] reported the highest incidence of cases in the age group 45- 64 years (35.39%) and Elfawal MA[16] who reported, that the highest number was found in the age group of 30- 39 years (44.3%). The age group of 21- 30 years is the tumultuous phase where a female might find herself facing multiple challenges in the form of marriage, educational ambitions, child rearing and inability to handle such problems might lead to a higher incidence of suicide in females in this age group.

On analysing the marital status (table 1) in the study we found that majority of women were married at the time of committing suicide, 80 (64.51%), followed by unmarried women i.e., 31 (25%) of cases. Divorced or separated women and widowed women were only 8 (6.45%) and 5 (4.03%) at the time of committing suicide. Similar findings were reported by other authors [7,13,14,17,18].

The highest number of decedents were literate, 114 (91.9%) which is consistent with studies done by authors [8,9,12,14]. Earlier studies done by authors Zhao C, Chavan BS and Mohanty S report that illiterate and lower levels of formal education are risk factors for suicide [19-21]. We observe that even though there are adequate opportunities to obtain education, a higher level of education doesn't protect against suicide as evidenced in the present study.

The present study shows that the highest number of women were housewives at the time of committing suicide with 71(52.26%) cases and the least were laborers or domestic help accounting for 8(6.45%) cases. Predominance of housewives was also reported by authors [9,13,14,17,22,25]. This can be explained by the fact that all housewives have no source of income and are dependent on their husbands or in-laws from monetary support, eroding their own sense of self-worth over time. In the present study we find that the highest number of decedents belonged to the Lower middle class (SES-III) with 53 cases (42.74%). Similar findings were reported by other authors [10,17,25,26]. In contrast, Mohanty S et al[23] and Singh PK et al[27] reported that the Lower class[SES-IV] to be more vulnerable and Chakraborty S et al[9] and Prajapati P et al¹⁴ reported that the highest number of victims belonged to the Upper middle class[SES-II]. In the present study, the preferred method to commit suicide in the present study was found to be Hanging,

with 99(79.84%) of cases. This was followed by the consumption of some poison which accounted for 16(12.90%) cases. Only 5(4.03%) of women choose self-immolation to commit suicide in the present study and 3(2.42%) choose to jump from a height. Our findings were consistent with those of authors [8,10,11,13,21,22,28,29]. Whereas authors [9,12,14,30] reported that ingesting a poison was the preferred method of committing suicide. Alternatively, Biswas S et al [7], Verma P et al [25] and Rawat S [31] reported self-immolation as the preferred method. In the present study we find that among the women who ingested a poison, the most common poison used was aluminum phosphide, which accounted for 6 (35.50%) cases, followed by Organophosphate insecticide, with 5 (31.25%) cases. Similar findings were reported by Lalwani S et al[29], but Chakraborty S[9] and Shetty CK et al[12] reported that the most common ingested poison in their studies was organophosphate insecticide.

Bangalore being a metro city, makes access to pesticide or insecticide poisons more challenging, and suicide by hanging is an easier way to commit suicide. In our study, we observed that the most common cause for suicide was depression due to chronic physical illness, which accounted for 22(17.74%) cases. This was closely followed by those who committed suicide due to suffering from physical and mental abuse by the in-laws or husband with 21 (16.93%) cases. Chakraborty S9 reported that both chronic illness and due to dowry demands were the most common cause with 32 (25.8%) cases each. Whereas Das S et al [17], Srivastava AK[26] and Zine KU[32] have reported that the most common reason was suffering from torture for Dowry. Authors [10,13,18,19,21,22, 24,27,33] observed that majority of the women in their study committed suicide due to conflict with family members or due to marital disharmony or marital unhappiness.

Conclusion

Suicide is defined as intentionally inflicted death [34]. Suicide is said to have replaced maternal disorders to become the commonest cause of death among women aged 15 to 49 years, up from fifth place [3]. In our study, we find that educated married women who belong to the lower middle socio-economic class were common victims of this malady. Home-makers were the most common subgroup involved. Hanging is the preferred method which is seen in other parts of the country as well. The most common reason was distress due to physical illnesses, though physical or emotional torture for dowry or other reasons was a close second.

Even though cases of dowry are on the down slope, there are families, especially in the lower middle socio-economic class that still follow this custom. The status of a woman is still poor as she has no means of financial independence, in spite of being educated. Though there are multiple strides made by women in all fields, suicides in women are a constant. To check this, there is a need for change in social and cultural outlook which can be achieved by improved education and financial empowerment of women in all classes of society.

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