

Suicide Methods in Elderly

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Abstract

The method of suicide employed varies over time, with age, gender and sociocultural factors. We retrospectively analysed over a 10 year period, from January 2001 to December 2010 for cases of suicide in individuals above the age of 65 years, at Department of Forensic Medicine, Government Medical College, Miraj, M.S. Total of 81 cases were found with an age range of 65-95 years (mean = 72.4 years) out of 4828 medicolegal autopsies. There were significantly more males than females (58:23). Hanging was found to be most common method (28/81; 34.57%), then poisoning (27/81; 33.33%). Burns and drowning cases were more in female.

Keywords: Elderly Suicide; Hanging; Poisoning; Drowning; Burns.

Introduction

Suicidal acts are multifaceted human behaviours involving many aspects of an individual's personality, state of health, and life situations. Though suicide accounts for a significant percentage of unnatural deaths globally, rates in different populations and age groups have varied over time, as have predisposing factors and the methods that have been used. Particular problems occur in older individuals which may predispose to self-destructive acts. Social isolation with significant mental and physical illnesses tend to be more common in the elderly, who may elect to terminate their lives rather than endure painful disease or loss of independence if nursing home placement is being considered [1]. Accessibility to an appropriate means of self-destruction has also been cited as a factor in determining the most favoured methods employed [2,3]. North American studies on suicide in older individuals have shown a preponderance of cases of fatal gunshot wounds [1,4]. Study from Australia

had shown hanging followed by gunshot wound as preferred method [5]. Studies from various parts of India revealed hanging and poisoning as most common methods [6,7]. The following study was undertaken to determine how suicide methods and rates in an elderly west Maharashtra population compared to other groups, and whether any changes over time had occurred.

Material and Methods

We retrospectively analysed over a 10 year period, from January 2001 to December 2010 for cases of suicide in individuals above the age of 65 years, at Department of Forensic Medicine, Government Medical College, Miraj, M.S. Relevant data were collected from autopsy report, inquest reports, chemical analyser's reports and hospital case records. Collected data were analysed using IBM SPSS 20 version statistical software, for gender differences and for trends over time.

Results

During study period (2001 -2010) total of 81 cases were found with an age range of 65-95 years (average = 72.4) which was 1.68% (81/4828) of all cases autopsied at Govt. Medical College, Miraj, M.S. There

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were significantly more males than females (58:23). The number of suicides from 2001 to 2005 was 25 with 16 male and 9 female cases; 56 from 2006 to 2010, with male 42 and female 14 cases. There was no significant increase in suicide rate. Hanging was found to be most common method (28/81; 34.57%), then poisoning (27/81; 33.33%), followed by drowning (17/81; 20.99%), burns (8/81; 9.88%) and only one case of gunshot wound (1/81; 1.23%). Figure 1. Year wise distribution of cases were as per Figure 2.

There were 25 male and 3 female hanging deaths with age range of 65- 92 years, a mean of 70.8 years with marked male predominance ($p < 0.001$). The age range for male was 65-92 years (mean = 70 years) and for female was 65- 90 years, mean age 77 years.

There were 24 male and 3 female poisoning deaths with age range of 65- 95 years, a mean of 71.3 years with marked male predominance ($p < 0.001$). The age range for male was 65-95 years (mean = 71.9 years) and for female was 65- 70 years, mean age 66.66 years. Chemical analysers report revealed maximum number of organophosphorus compounds, Monocrotophos (3/27), Dichlorovos (4/27), Chlorphyriphos, cypermethrin (3/27), Endosulfan (Thiodan) (1/27), OP compounds (3/

27). Chemical analysers report was negative in 12 cases, only one case is of organochloro compound. So all cases were of insecticide poisoning. Survival period is 6 hours to 9 days, 5 cases were brought dead.

There were 7 male and 10 female drowning deaths with age range of 65- 95 years, a mean of 76 years with significant more female cases ($p < 0.001$). The age range for male was 65-83 years (mean = 73.14) and for female was 65- 95 years, mean age 78 years. Deaths due to drowning occurred in river and well.

There were 1 male and 7 female burns deaths with age range of 75- 90 years, a mean of 79 years with significant more female cases ($p < 0.001$). Only one case of male was found with age of 75 years and for female was 75- 90 years, mean age 79 years. Out of eight cases five cases were brought dead. Survival period was 6 hrs to two days.

One case of suicidal gunshot wound (firearm) was found in the study period of 65 years old male who committed the act in temple. Gunshot wound was present over abdomen. Multivariate analysis of method of suicide with reference to age, sex, residence and marital status is shown in Table 1. It showed significant relation with method of suicide.

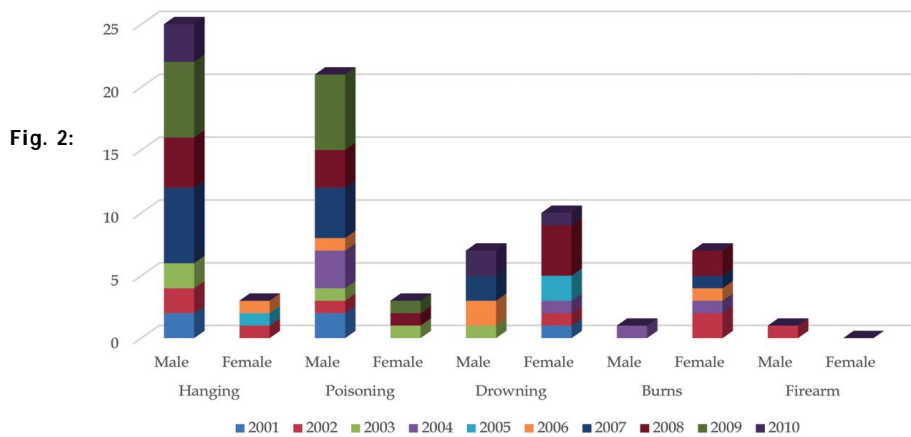
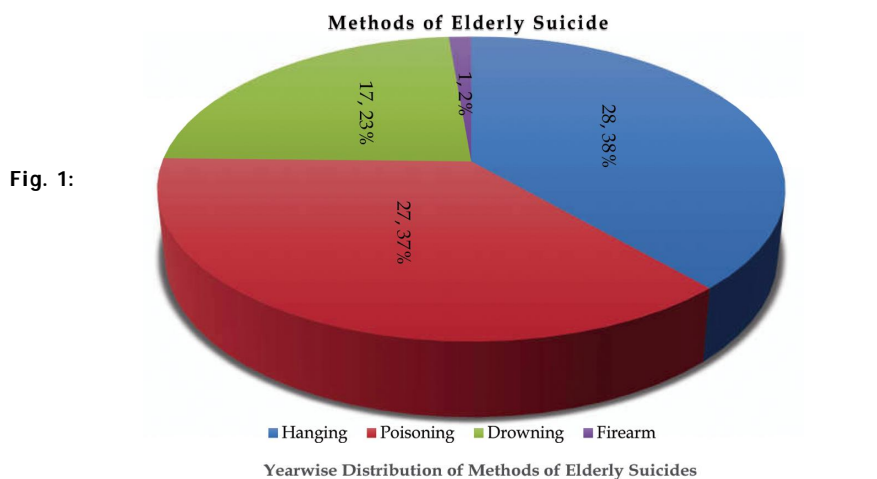


Table 1: Multivariate analysis between-subjects factors

		Method of Suicide	Number of cases
Group	1	Poisoning	27
	2	Hanging	28
	3	Burn	8
	4	Drowning	17
	5	Gunshot	1
Source	Dependent Variable	F	P-value
Group	Age	2.820	.031
	Sex	11.269	.000
	Residence	4.648	.002
	Marital status	7.484	.000

Discussion

Suicide in general, across various civilizations and religion has always been condemned. Although it is widely encountered, the various complexities involved are unfortunately ill understood. A proper understanding of these aspects is imperative for any suicide investigation [6].

Present study includes 81 cases of elderly suicides. This reflects 1.68% of all cases autopsied at GMC, Miraj. It was 1.6% in Manipal [6]. Male victims predominated and this finding is consistent with previous studies [5,6,7,8].

Hanging was found to be most common method (28/81; 34.57%). Deaths due to hanging was 24% in South Australia [5], 17.9% in Manipal, South India [6], 65.5% in Manglore, South India[8], 52% in Study in Tamilnadu [7] But differs from the studies from North America [2], where 80.7% of suicides were due to gunshot wounds. In this study one case was found due to gunshot wound. Thus choice of method of suicide differs in different populations. Gun legalisation is much stricter in Maharashtra, India and so it is possible that the significantly lower numbers of suicides in elderly Maharashtrians is due to lack of access to firearms.

Poisoning deaths were 27 out of 81cases (33.33%) and deliberate consumption organophosphorus compounds being most preferred method. It is consistent with studies from Manipal [6], Manglore [8], and Tamilnadu [7]. People in this region have easy accessibility to these insecticides since these are commonly used for agriculture purpose.

Drowning deaths were 17(20.99%), burns deaths were 8(9.88%), and female cases were more in these two methods of elderly suicide. These findings are consistent with previous studies [7,8].

The method of suicide employed varies over time, with age, gender and sociocultural factors. It is a general principle that elderly men adopt more violent methods than women, which may partially explain

the gender difference in rates. In England and Wales, hanging currently remains the most common method employed by men, while self-poisoning is most often used by women. In the USA, firearms are used by over 60% of all completed suicides, with elderly White men employing this method most frequently [9]. In our study most common method used by male were hanging followed by poisoning, female preferred burns and drowning.

Extending psychiatric services to the suicide prone elderly individuals in the community may reduce incidence of suicide. Reducing the availability of means of suicide as a preventive strategy has been advocated as an important strategic initiative. Programmes aimed at suicide prevention will require data derived from specific target population so that peculiar local trends and population characteristics can be identified and appropriate preventive measures can be formulated.

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