

A RETROSPECTIVE STUDY ON SUICIDE AUTOPSY CASES FROM RAMATHIBODI HOSPITAL IN BANGKOK THAILAND

Panarat Sritus¹, Montip Tiensuwan², Suda Riengrojpitak³

¹Forensic Science Graduate Programme, ²Department of Mathematics, ³Department of Pathobiology, Faculty of Science, Mahidol University, Bangkok, Thailand

Abstract

The purpose of this study was to examine the characteristics of suicidal death and the association between suicide methods and other suicidal factors. Six-year retrospective review of personal and medicolegal autopsy records was conducted at the Forensic Medicine Division in the Department of Pathology, Faculty of Medicine, Ramathibodi Hospital, Mahidol University. A total of 383 cases of suicide victims autopsied during January 2003 to December 2008 were examined. Data concerning sex, age group, suicide methods, season, time of death, marital status, suicidal risk factor, drugs, toxicology results and cause of death were analyzed. Suicide cases consist of 297 males and 86 females. The largest age group was 20-29 years and average age was 37 years with standard deviation 17.78 years. Males committed suicide 3.5 times more than females, and hanging was the favorite method (42.3%). The frequency of suicide was found in day time and in rainy season. Hanging, asphyxia was a cause of death. Single status was usually found in suicide victims. Suicide notes were found in 14 cases. Toxicological analysis revealed that 79 victims (75%) consumed drugs prior to the act which documented by blood and/or urine drugs concentration measurement. Stressful-related to mental illness were an important risk factor. The association between suicide methods and other factors such as age group, marital status, nationality, risk factors, and time of death were statistically significant, at p -value < 0.05 .

Key words: Autopsy investigation, hanging, suicide methods

Introduction

Suicide is one of the causes of death in adults in the industrialized countries. Globally, estimated 815,000 people killed themselves in the year of 2000, making suicide the 13th leading cause of death. The highest rates of suicide are in the East European countries. The lowest rates are mainly in Latin American and a few countries in Asia [20]. At present, suicide is an important problem in forensic science because it is an unnatural death and not easy to separate from homicide and accident. Two points need to be considered: First, evidence of the death scene or anything found at the scene, such as knife or gun. Second is autopsy of death body to define a cause of death. Nowadays, suicide is a problem in every country and men are higher than female. In most countries of the western world, the suicide ratio of male to female is 3:1 [9]. Many studies showed that males are three times more likely to commit suicide than females [8]. The age range was 9-70 years with a mean age of 33.4 years [4]. In the northern part of Thailand, suicide ratio of male and female was 3.6:1, and hanging was the most common method [11]. Therefore, the aim of this study is to examine the characteristics of suicide in central Bangkok, Thailand and distributions of suicidal variables data such as gender, age group, suicide method, underlying disease, cause of death, season, time of death and personal information and to find the association between autopsies finding factors in suicide cases.

Materials and Methods

A total of 383 cases suicidal death data from January 2003 to December 2008 were collected from the Autopsy Service, Faculty of Medicine, Ramathibodi Hospital, Mahidol University.

The descriptive statistics were used to analyze both personal data and autopsy findings to find the frequency, percentage, mean and standard deviation (SD). Chi-square test was used to test the association between properly variables in each group. All data were analyzed by using a statistical package SPSS for windows version 17.0. Statistical significance was considered at p -value < 0.05 .

Total 383 suicide cases consist of 297 males and 86 females. Male to female ratio was 3.5:1. It showed that male dominance continuously during 6 years period of examination (Table 1).

Table 1. Suicide trends in central Bangkok Thailand during 2003-2008

Gender	Year						Average	Number of cases	% of cases
	2003	2004	2005	2006	2007	2008			
Male	56	50	52	42	62	35	50	297	77.5
Female	16	21	17	8	13	11	14	86	22.5
Total	72	71	69	50	75	46	64	383	100.0
Male: Female	3.5	2.4	3.1	5.3	4.8	3.2	3.5	3.5	3.5

Table 2. Numbers of suicide methods during year 2003-2008

In Table 2, suicide methods were classified into 4 groups, i.e. drowning, fall from height, hanging, and others which consisted of blast injury, drug overdose and toxicity, gunshot wound, sharp force injury and electrocution. Hanging was the leading method of suicide accounting for 42.3% of cases, fall from height 27.9%, drowning 20.6%, and others 9.1 %.

Methods	Year						Number of cases	% of cases
	2003	2004	2005	2006	2007	2008		
1. Drowning	11	14	19	12	18	5	79	20.6
2. Fall from height	19	21	25	15	19	8	107	27.9
3. Hanging	34	32	22	21	31	22	162	42.3
4. Others	8	4	3	2	7	11	35	9.1

Distribution of suicide characteristics are shown in Table 3. Suicide death was found in male more than female. The ratio between male and female was 3.5:1. The age range was between 12 to 85 years, with an average age of 37 years. There were 6 age groups, less than 30 years to more than 70 years with unknown age group. Less than 30 years shows the highest percentage of victim's age, account for 35.5% and followed by 30-39 years, account for 22.7%. The smallest group was 60-69 years, account for 5.7%. The unknown age group was obtained from unknown person who died from drowning. The youngest suicide was 12 years old and there was only 1 case. The average male and female age was 38 and 34 years, respectively.

Marital status were classified into single, married (including married, divorce, widow, and live together without marry), and unknown group. Single was the leading group, account for 46.7%, followed by the unknown 35.8% and married 17.5%. In male and female, unknown, single and married were 35.8%, 34.2% and 12.5%, and 5.4%, 37.4%, and 14.8%, respectively. The nationality of victims was Thai (87.5%), unknown (3.4%) and others (9.1%).

Table 3. Distribution of suicide characteristics (2003-2008)

Risk factors were identified as potentially contributing to victims committed suicide (Table 4). There were known and unknown risk factors. Known group, 51 victims were stress and led to commit suicide including love problem, economics status, unemployment, family argument and worry about their lives with others stressors. The underlying diseases and drug abuse were found in 86 cases. The unknown risk factor was 246 cases.

Day-time, the highest frequency time of known group, were found in 137 cases and 129 cases in night-time. For unknown group the fatalities were 117 cases. The time of year for suicide was evenly distributed among seasons, ranged from 15.7% to 50.4%. The highest rate of suicide was found in the rainy season (50.4%), peak in May and June, followed by winter (33.9%) and the lowest rate was in summer (15.7%) (Table 4).

Characteristics		Number of cases	% of cases
Gender	Male	297	77.5
	Female	86	22.5
Age group (Years)	< 30	136	35.5
	30-39	87	22.7
	40-49	57	14.9
	50-59	32	8.4
	60-69	22	5.7
	≥70 and Unknown	49	12.8
Marital status	Single	179	46.7
	Married	67	17.5
	Unknown	137	35.8
Nationality	Thai	335	87.5
	Others *	48	12.5
Total		383	100

* American, Belgisch, Bhutanese, Burmese, Camerounaise, Canadian, Chinese, French, German, Indian, Japanese, Korean, Laos, Nederlandse, New Zealander, and unknown nationality.

Table 4. Distribution of other factors found in suicide cases (2003-2008)

Information		Number of cases	% of cases
Methods	Drowning	79	20.6
	Fall from height	107	27.9
	Hanging	162	42.3
	Others	35	9.1
Risk factors	Stressful	51	13.3
	Underlying disease	86	22.5
	Unknown	246	64.2
Time of death	00.01-06.00	51	13.3
	06.01-12.00	86	22.5
	12.01-18.00	65	17.0
	18.01-00.00	64	16.7
	Unknown time	117	30.5
Season ^b	Summer	60	15.7
	Rainy	193	50.4
	Winter	130	33.9
Total		383	100.0
Suicide note		14	3.7

^b Summer: March to April, Rainy: May to October, Winter: November to February [21].

Table 5. Association between suicide methods and others personal characteristics

Characteristics		Methods ^a			
		01	02	03	others
Gender	Male	67	75	127	28
	Female	12	32	35	7
$\chi^2 = 5.995$, p-value = 0.112					
Age group (years)	< 30	21	44	58	13
	30-39	10	22	48	7
	40-49	13	18	19	7
	50-59	7	11	12	2
	60-69	5	2	10	5
	≥70 and Unknown	23	10	15	1
$\chi^2 = 42.143^*$, p-value = 0.000, significant at p-value < 0.05					
Marital status	Single	29	59	77	14
	Not-single	7	16	38	6
	Unknown	43	32	47	15
$\chi^2 = 22.012^*$, p-value = 0.001, significant at p-value < 0.05					
Nationality	Thai	68	89	145	33
	Others ^b	11	18	17	2
$\chi^2 = 4.034$, p-value = 0.258					
Risk factors	Stress	4	9	34	4
	Underlying disease	14	28	37	7
	Unknown	61	70	91	24
$\chi^2 = 18.615^*$, p-value = 0.005, significant at p-value < 0.05					
Time of death	00.01-06.00	8	19	22	2
	06.01-12.00	23	21	35	7
	12.01-18.00	12	13	32	8
	18.01-00.00	6	15	36	7
	Unknown	30	39	37	11
$\chi^2 = 22.240^*$, p-value = 0.035, significant at p-value < 0.05					
Season ^c	Summer	16	14	24	6
	Rainy	34	57	82	20
	Winter	29	36	56	9
$\chi^2 = 3.880$, p-value = 0.693					
Total		79	107	162	35

^a 01: drowning, 02: fall from height, 03: hanging, and others consist of blast injuries, drug overdose and toxicity, gunshot wound, sharp force injuries, and electrocution.

^b American, Belgisch, Bhutanes, Burmese, Camerounaise, Canadian, Chinese, French, German, Indian, Japanese, Korean, Laos, Nederlandese, New Zealander, and unknown.

^c Summer: March to April, Rainy: May to October, Winter: November to February [21]

The association between suicide methods and age group, marital status, risk factors and time of death were found, significant at p -value < 0.05 (Table 5). Furthermore, the autopsy report showed that asphyxia was the most common cause of death and followed by hanging method. Toxicological examination of blood, urine and other body fluids demonstrated drugs and many substances, e.g. drug treatment of victims and alcohol before death.

Discussion

The dominance of suicide victims was male which similar to those found in many countries [2, 15, 17, 20]. The ratio of suicide male was higher than that of female 3.5 times which comparable to the reports of previous studies that male were 3 to 4 times more than female [1, 11, 13], and of northern part of Thailand suicide trends [11]. Hanging was commonly reported as the leading suicide method in most countries accounting for 42.3% [2, 3, 5-7, 10-12, 16, 18]. The second and third were fall from height and drowning, respectively. Other reports showed that gunshot was the most common suicide method, follow by hanging and overdose [1, 17].

The rate of suicide increased dramatically in the younger at age range 15 to 24 years for both male and female and continued to rise especially in young male [19]. The youngest victim in suicide was 11 years, range from 11 to 96 years with an average age 42.0 years [17]. The results from the present study demonstrated that the youngest victim was female 12 years while male was 14 years; the age of the oldest group was 85 years in male and 77 years in female which less than that of previous study with age range from 12 to 94 years [1]. The average age and peak of male suicide victims was 38 years and 23 years; and of female was 34 years and 27 years, respectively. The results were similar to those from previous studies which average age of suicide was at the early mid-life and adolescents [1, 2, 5, 7, 17]. It might be that mid-life was the period of working and more chance

to face many factors such as employment, colleagues, job, and other problems which induced them to commit suicide. Contrary to the report from Australia demonstrated the decline of young male suicide victim [14].

Conclusion

The suicide rate in central Bangkok was most prevalent in Thai middle age males. The most common method was hanging followed by fall from height and drowning. Suicide mostly occurred during day time. The most influence factor was the underlying disease, most victims suffered from the disease and they had ideas to committed suicide. To prevent suicide these factors should be kept in minimum.

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