Epidemiology of Cases of Suicide due to Hanging who Referred to Forensic Center of Shahriar in 2011

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ABSTRACT

Background: Around 800,000 to a million people die by suicide every year, making it the 10th leading cause of death worldwide. According to high rates of suicide and hanging and death due to these reasons in the world and also in Iran, this study was conducted to evaluate cases of suicide by hanging. Methods: This descriptive cross-sectional study was conducted on 79 cadavers in forensic dissection center of Shahriar in 2011. Necessary information including age, sex, laryngeal bone fracture, bleeding of soft tissue, number of family members, educational level, marital status, history of depression, addiction, smoking, history of any special disease, location of hanging, leaving any note, ethnicity and suicide intensity was entered in the checklist and were analyzed. Results: The mean age of cases was 33.4 (SD=13.62) years. 63 (79.7%) were male and 16 (20.3%) were female.10 (12.7%) patients of the study population were illiterate and 56 (78.9%) were under diploma and only 8 (11.3%) patients had diploma. 17 (23.9%) were unemployed, 5 (7%) were students, 20 (28.2%) were workers, 10 (14.1%) were employees and 15 (21.1%) were self-employment. 23 patients (32.4%) were drug addict. 13 patients (18.3%) had a history of depression. 38 patients (53.5%) were smokers. 56 (78.9%) of hanging were in home and 15 (21.1%) were in outdoors. Suicidal impulses in 33 patients (46.5%) was unspecified, in 10 cases (14.1%) was substance abuse, in 11 (15.5%) was mental disorders, in 6 patients (8.5%) was family problems, and in 7 patients (9.9%) was unemployment. Conclusion: Given the high rate of suicide, it is necessary to identify the risk factors, to prevent to the extent possible. Treatment of drug and alcohol addiction, depression, and those who have attempted suicide in the past may also be effective. Economic development through its ability to reduce poverty may be able to decrease suicide rates. Efforts to increase social connection especially in elderly males may be effective.

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► Implication for health policy/practice/research/medical education: Epidemiology of Cases of Suicide due to Hanging

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1. Introduction:

Suicide is the act of intentionally causing one's own death. Suicide is often committed out of despair, the cause of which is frequently attributed to a mental as depression, bipolar disorder such disorder, schizophrenia, alcoholism, or drug abuse (1). Certainly, financial problems and difficulty in social relationships play an important role in this act (2).

Around 800,000 to a million people die by suicide every year, making it the 10th leading cause of death worldwide (1, 2). Suicide rates in the world, mainly in developing countries, in the past fifty years have increased about 60%. A significant amount of suicides occur in Asia, which includes about 60% of suicides. Based on WHO reports, China, India and Japan are included in approximately 4% of all world suicides (3)

Suicide ranked as the fifth leading cause of years of life lost in Iran. Its prevalence was about 642 in every 100000 persons in every year. Based on data obtained in 1382, cause of 4267 suicides in Iran was, hanging in 34.2%, self-burning in 27% poisoning in 18.8%, and suicide through other methods in 20% (4). A review of 56 countries found that hanging was the most common method in most of the countries (5), accounting for 53% of the male suicides and 39% of the female suicides (6).

Rates are higher in men than in women, with males three to four times more likely to kill themselves than females (7). There are an estimated 10 to 20 million attempted suicides every year (8). Factors that affect the risk of suicide include psychiatric disorders, drug misuse, psychological states, cultural, family and social situations, and genetics (4).

According to high rates of suicide and hanging and death due to these reasons in the world and also in Iran, investigate the deaths and identify risk factorsof these cases is seems necessary. So this study was conducted to evaluate cases of suicide by hanging.

2. Materials and Methods:

This descriptive cross- sectional study was conducted in forensic dissection center of Shahriar in 2011. We recruited 79 cadavers which referred to forensic dissection center due to hanging of whom were male and were female.

Necessary information including age, sex, laryngeal bone fracture, bleeding of soft tissue, number of family members, educational level, marital status, history of depression, addiction, smoking, history of any special disease, location of hanging, leaving any note, ethnicity and suicide intensity was entered in the checklist by one of the project member. Collected data were entered in to SPSS version 16 and were analyzed. For descriptive analysis, we used mean, standard deviation and frequency.

It should be noted that all the provisions of the Helsinki Declaration on research projects has been respect in this study.

3. Results:

This study examined 79 cases of suicide by hanging. The mean age of them was 33.4 (SD= 13.62) years. Minimum age was 13 and maximum age was 74 years. Half of the subjects were less than 31 years. Average number of families were 4.4 (SD= 2.14). Family members were at least one when they were single, up to 10 people.

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Table 1: Educational status in population study.				
Valid	Education	Frequency	Percent	
	Illiterate	10	12.7	
	Elementary school	22	27.8	
	Primary school	24	30.4	
	High school	7	8.9	
	Diploma	8	10.1	
	Total	71	89.9	
Missing		8	10.1	
Total		79	100.0	

From the 79 bodies were examined, 13 had laryngeal bones fracture, which include: One sided fracture of superior ramus of hyoid bone in 8 bodies, fracture of superior ramus of hyoid bone and fracture of superior ramus of thyroid cartilage in 2 bodies, fracture of body of thyroid cartilage in 2 bodies and fracture of superior ramus of thyroid cartilage in 1 body.

In 11 of corpses, no signs of bleeding under the skin, neck muscles and muscles around the throat and larynx were present. Soft tissue bleeding was seen in 13 patients who had laryngeal fractures.

From 79 cases of suicide by hanging, 63 (79.7%) were male and 16 (20.3%) were female. 10 (12.7%) patients of the study population were illiterate and 56 (78.9%) were under diploma and only 8 (11.3%) patients had diploma, while no one had higher diploma. Details are shown in Table 1.

A total of 30 patients (42.3%) were married, 34 (47.9%) were single, and 7 patients (9.9%) were divorced. In terms of employment status, 17 (23.9%) were unemployed, 5 (7%) were students, 20 (28.2%) were workers, 10 (14.1%) were employees and 15 (21.1%) were self-employment.

23 patients (32.4%) were drug addict and 46 patients (64.8%) were not and 2 (2.8%) were unknown. 13 patients (18.3%) had a history of depression. While the remaining 58 (81.7%) patients did not. 38 patients (53.5%) were smokers and 33 (46.5%) didn't have history of smoking. No specific disease was observed in cases.

56 (78.9%) of hanging were in home and 15 (21.1%) were in outdoors. We did not find any note in none of the cases. Ethnicities of patients are shown in Table 2.

Suicidal impulses in 33 patients (46.5%) was unspecified, in 10 cases (14.1%) was

Table 2: Ethnicity in population study.				
	Ethnicity	Frequency	Percent	
Valid	Lor	9	11.4	
	Kurd	10	12.7	
	Fars	25	31.6	
	Turk	22	27.8	
	Afghan	3	3.8	
	Total	69	87.3	
Missing		10	12.7	
Total		79	100.0	

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substance abuse, in 11 (15.5%) was mental disorders, in 6 patients (8.5%) was family problems, and in 7 patients (9.9%) was unemployment.

There was not a significant difference between age in both sex (P value> 0.05). Mean age in males was 34.4 and in females was 29.2 years.

4. Discussion:

Based on our results, suicide is more in men, married, low educational level, workers and unemployed. Also rate of drug addiction or smoking and history of depression in our cases was more than normal population.

Suicide and attempted suicide, while previously criminally punishable, is no longer in most Western countries. It remains a criminal offense in most Islamic countries (9).

Psychiatric disorders, drug misuse. psychological states, cultural, family and social situations, and genetics are the most important factors that affect the risk of suicide (4). Mental illness and substance misuse frequently co-exist (3). Other risk factors include having previously suicide (10) the attempted ready availability of a means to commit the act, a family history of suicide, or the presence of traumatic brain injury, for example, suicide rates have been found to be greater in households with firearms than those without them (11). Socio-economic factors such unemployment, poverty, as homelessness, and discrimination may trigger suicidal thoughts (12). About 15-40% of people leave a suicide note, although none of our cases leave note. Genetics appears to account for between 38% and 55% of suicidal behaviors (13).

Half of all people who die by suicide may have major depressive disorder (14). Substance abuse is the second most common risk factor for suicide after major depression and bipolar disorder. The misuse of cocaine and methamphetamines has a high correlation with suicide (3, 15) Those who used inhalants are also at

20% significant risk with around attempting suicide at some point and more than 65% considering it (3). Smoking cigarettes is associated with the risk of suicide. There is little evidence as to why this association exists; however it has been hypothesized that those who are predisposed smoking also to are predisposed to suicide, that smoking health causes problems which subsequently make people want to end their life, and that smoking affects brain chemistry causing a propensity for suicide (16).

Given the high rate of suicide, it is necessary to identify the risk factors, to prevent to the extent possible. Treatment of drug and alcohol addiction, depression, and those who have attempted suicide in the past may also be effective. Economic development through its ability to reduce poverty may be able to decrease suicide rates (17). Efforts to increase social connection especially in elderly males may be effective (18).

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