

Women victims of self-inflicted burns in Tabriz, Iran

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Abstract

From 20 March 1998 through 20 March 2002, a total of 412 cases of self-burning were admitted to the burn center of East Azarbaijan, located in the city of Tabriz, Iran. The average age was 25.5 years; 99% of self-burning cases were female. A total of 76.5% of those patients were in the 15–19 and 20–29 year age groups. Most cases were married, housekeepers and illiterate and poor. Seventy-five percent of the patients had impulsive suicidal intention. The major motive was marital conflict. The mortality rate was 79.6%. The mean burned surface area was 65.5%. Kerosene was used by 77% of the patients as a burning agent.

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1. Introduction

Suicide is the result of an act deliberately initiated and performed by a person in the full knowledge or expectation of its fatal outcome. There are many different methods and means of deliberate self-injury according to geographical region, social factors and gender. It is well known that availability of means to commit suicide has a major impact on actual suicides in any region. This has been best studied for firearm availability the finding being that there is a high mortality by suicide among people purchasing a firearm in the recent past [1,13,14,17,20,29,30].

The incidence, pattern and trends of suicide differ considerably between Asian and Western countries. They also differ considerably between Asian countries and regions [32]. In different parts of Iran, 1.39–40.3% of all suicides and para-suicides have been reported as coming about through self-inflicted burns [23,24]. Women are the main victims of self-inflicted burns for suicide in Iran [1,25,29]. In proportion to population, the Kohkiluyeh and Boyerahmad, Boushehr and Ilam provinces of Iran were foremost in incidence of self-inflicted burns in 1993 [1]. Since self-inflicted burns are a major health and public problem, we considered it of some interest to analyze all admissions over a period 4 years to the burn center of East Azarbaijan province in

order to verify whether there exist data confirming the tendency to use fire for attempted suicide and to analyze the prognosis of these patients.

2. Method and material

This study was carried out at the burn center of The Sina Hospital, Tabriz, East Azarbaijan, Iran; this unit serves all the East Azarbaijan region. It was a prospective study in which 3817 consecutive admissions to the burn center, over a period of 4 years (from 20 March 1998 through 20 March 2002) were analyzed. The population of the province is about 3.3 million. Four hundred and twelve patients had attempted suicide by burning. These represented 10.8% of all patients with burns admitted over the same period.

A special performa was prepared to study the socio-demographic profiles of the patients. Factors recorded included age, educational status, marital status, occupational status, type of family, monthly income, percentage of burns, method of self-inflicted burn, previous diseases and principal motives. All patients whose burn might have been the result of a suicidal attempt were assessed by the social workers of the hospital and the performa was completed. Four hundred and twelve patients who had clearly and unequivocally made suicide attempts were identified. Inclusion criteria were based on the patient's confession to deliberate self-burning or a testimony of a reliable witness. Patients whose suicide attempts seemed suspicious or dubious were excluded from the study.

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Associations between categorical variables within the sample were tested for statistical significance using Pearson’s chi-square test. A Fisher exact test was used when the expected number of the subjects was less than five. A level of $P < 0.05$ was considered significant.

3. Results

During the 4 years of the study, 412 cases of attempted suicides were admitted (12.48 per 100,000 general population). In 320 (79.6%) of them, death occurred, which is equal to 9.7 per 100,000 general population. Ninety-nine percent were female and four patients (1%) were male. Sex and age distribution are shown in Fig. 1.

There is variable trend in the number of patients over the 4 years (Fig. 2). The mean age was 25.5 years (S.D. = 16.0579 years), with a range of 16–72 years. A total 76.5% of the patients were in the 15–19- and 20–29-year age groups. All the males were observed in the 20–29-year age group.

Table 1
Agents used to ignite fire in attempted suicide

Flammable agents	Number	Percentage
Kerosene	347	84.3
Benzine (gasoline)	50	12.1
Domestic gas	13	3.1
Alcohol	2	0.5

The method chosen for attempting suicide was kerosene in 347 (84.3%) patients, followed by benzine (gasoline), domestic gas and alcohol (Table 1).

The location at the time of attempted suicide in all patients was home. The body surface area burned ranged from 10 to 100%, with a mean of 65.5% (S.D. = 19.48). Eighty-three percent of cases were married, 43.4% of them had no education and 97% were the housekeeper in the house. Demographic data are shown in Table 2.

Seventy-five percent of the cases had impulsive suicidal intention. In 25% of the cases, the individual had spoken

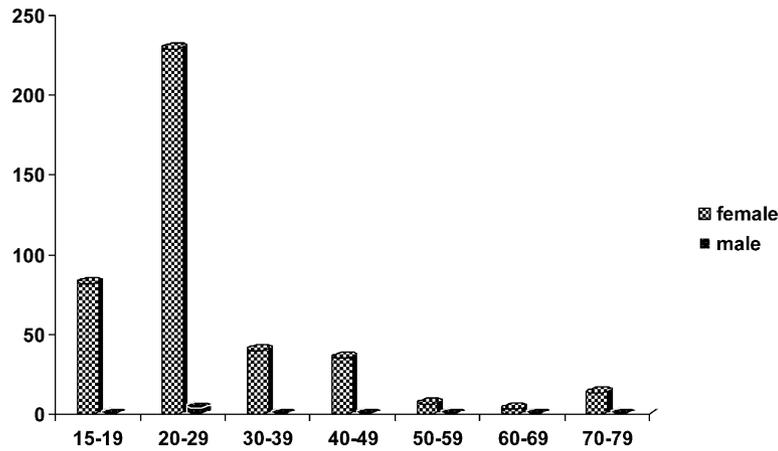


Fig. 1. Distribution of patients according to age and sex.

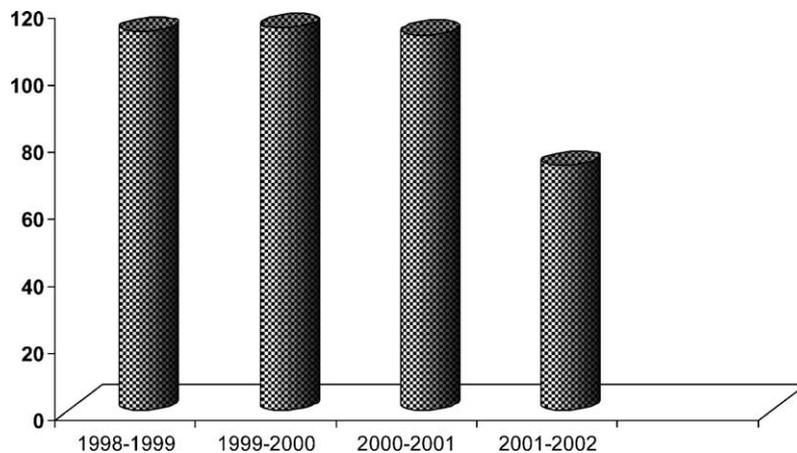


Fig. 2. Four-year distribution of 412 self-inflicted burns.

Table 2
Demographic data of 412 self-inflicted burn cases

State	Number	Percentage
Marital state		
Single	55	13.3
Married	341	82.8
Engaged	13	3.1
Widowed	3	0.7
Occupational state		
Housekeeper	400	97.1
Carpet weaver	7	1.7
Worker	4	0.97
Hairdresser	1	0.24
Educational state		
Uneducated	179	43.4
Primary school	59	14.3
Secondary school	113	27.4
High school	58	14.1
University	3	0.73

Table 3
Principal incentives for self-inflicted burns

Incentive	Number	Percentage
Marital conflict	210	51
Love affair	47	11.4
Family problems	46	11.2
Conflict with own child	5	1.2
Depression	47	11.4
Unknown	57	13.8

Table 4
Causes of marital conflict of 210 cases of self-burning

Causes	Number	Percentage
Poverty	210	100
Lack of understanding with the spouse	150	71.4
Addiction and alcohol dependence of the spouse	23	10.9
Lack of love	50	23.8
Infidelity	3	1.4
Conflict about dowry	2	0.95
Lack of children	2	0.95

of self-immolation. Not one of the survivors had attempted self-burning at follow-up. The reason for the suicidal attempt was known in all cases (Table 3). The forms of marital conflict are represented in Table 4. Three of the patients were pregnant (12, 16 and 20 weeks) with 60, 80 and 90% self-inflicted burns. All of the self-burn pregnant patients died.

Three hundred and twenty patients died in hospital, 127 died within the first 48 h after admission. The most common

Table 5
Prevalence of psychiatric diagnosis in 412 self-burning patients

Psychiatric disorder	Number	Percentage
Depression	288	70
Anxiety disorders	219	53
Addiction	1	0.24

mental disorder leading to self-burning was depression, followed by anxiety (Table 5).

4. Discussion

Gender, geographical location and lapse of time have influenced methods of suicide. In Iran, the majority of men who commit suicide hang themselves, while 83% of women who committed suicide in 1993 set themselves ablaze [1]. In the present study, a total of 412 cases are described in a prospective way over a 4-year period, a mean of 103 cases per year, with total of 320 deaths. This rate is close to the reported cases in other region of Iran [1,25,29], India [2,3] and Israel [4] but is much higher than rates in Japanese [5], Australian [6] and Western populations [7–18].

Literature on suicide indicates that men are more likely to commit suicide than women, whereas women are more prone to make suicidal attempts [19]. But our study revealed that the main victims of suicide attempt by burning in East Azarbaijan province were women. This is similar to the situation seen in Cairo [20], in other Asian populations [2–4,14] and in other provinces of Iran [1,23–25,29]. In Western countries [10,18,21,22], single old men form the majority who commit suicide. In Iran, the majority of suicides are young married women [1,23–25,29].

The majority of studies have revealed that family problems (such as addiction of the spouse, difference of age, lack of understanding with the spouse, bigamy, lack of interest in the family affairs), lack of love, premature marriage and excessive sensitivity in regard to the taboo of divorce are the most important reasons that lead to suicide by self-burning, particularly among women. Research on women who have taken their lives shows that they have suffered degradation in the family, many have been subjected to male domination and arrogance, been married at an early age, or arbitrarily married within the clan, there are frequently big differences of age between the couple or a lack of children [1].

Incentives for self-burning for suicide differ in different regions of Iran. Sixty-seven percent of these who committed suicide in Lorestan were women and mostly illiterate and poor (the majority of them were from medium or low income classes). In Ilam, where 80% of self-burning was committed by young women, the most common incentives for self-burning are excessive depression, calumny about family honor and poverty [1,25]. In Gonabad, Turkmansahra and Gilan, cases such as disputes between married couples, bigamy, frustration in education and physical and mental illnesses including addiction, alcoholism and poverty were the most important incentives for suicide. The economic factor is a rising element particularly among women and from 1988 to 1991 suicide associated with poverty has nearly doubled in Gilan province. Also, successful or unsuccessful suicide attempts among women in Lorestan, Mazandaran and our study, occur mostly among housewives who had no independent income [1,23–25].

Unemployment, illiteracy, immigration, unequal opportunity for the two sexes, and the traditional male domination social codes in the communities, other factors included crowded families, lesser respect for women, difference of age between the married couple and arbitrary clan intermarriage, all these have placed women in an unequal and unfair situation [1,25].

Research studies conducted for the years 1989 and 1990 have revealed that Kohkiluyeh and Boyerahmad province ranked first in suicide by setting oneself ablaze with Boushehr second and Ilam third [1,25].

There were no deliberate self-burnings committed as a political gesture in East Azarbaijan and other provinces of Iran [1,29], whereas a large proportion of the Western cases appeared to have a political motivation after 1963 [10].

The majority of patients (84.3%) in our study used kerosene as the flammable liquid to ignite their clothes or their beds. This is close to the study of reported cases in Israel [26]. Fuel (gasoline, benzine, kerosene) was the flammable liquid used in 91% of suicidal attempts in Israel [26], in 60.6% in Korea [27], and in 24 out of 128 cases in the province of Ontario, Canada [22]. The mean BSA burnt in our study was 65.5% (S.D. = 19.48%), this pattern has been reported from 29.5 to 44.4% in Western series [6,8,11,13,14,30], 45% in Egypt [20], 62.9% in Mazandaran province of Iran [29].

In our study, 79.6% of the cases died. This rate is higher than the mortality report in Mazandaran province of Iran (79.2%) [29], Egypt (73%) [20], and Asian origin women in Yorkshire, UK (64.2%) [14]. Of all the persons who died from firearm injuries in the US in 1997, a total 54% died by suicide. But the mortality in Western countries and Australia has been reported from 12 to 47.5% [6,8,13,17,28,30]. The higher mortality rate in our study may be due to more severe suicidal intent or use of more flammable liquids.

None of our cases had a history of self-burning in the past, nor had survivors made more such attempts at the follow-up. There are isolated cases of a second suicide attempt by burning after recovery from the initial attempt worldwide [31].

In Western studies, depression was the most mental disorder leading to self-burning, as well as our study [6,8,10,11–13,15–18,22,30].

In our opinion, social factors are the main drive leading to an unacceptably high rate of suicide by self-burning among women in Iran. The problem is difficult to address and will depend precisely upon economic, educational and social advancement for the amelioration.

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