

# The Role of Mental Health Services Among People Who Attempted Suicide by Taking a Drug Overdose During the Last Year Before Their Suicide Commission

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## Abstract

**Background:** Suicide victims frequently have had contact with mental health services before they commit suicide. In this study, the rate of mental health care system contact during the last year before the suicide commission was evaluated.

**Methods:** Utilization of mental health care was evaluated during the last 12 months among 231 individuals who committed suicide assessed by the questionnaire.

**Results:** Of the suicide victims, 62% had used mental health services at least once. The mean age of the patients was 29.7 years (SD = 4/11). There was not a significant difference in age between men and women who had used mental health services ( $p=0.077$ ). There was a significant relationship between the two groups using and not using mental health services and suicide ( $p=0.008$ ). There was also a significant relationship between psychiatric illness and mental health services use ( $p<0.0001$ ). Of the suicide victims, 5.6 % had a history of psychiatric hospitalization during the last year before the suicide commission.

**Conclusion:** Mental health care providers should perform an accurate suicide risk assessment and post-discharge treatment planning. Continued and more serious follow-up of these patients with strategies such as psychosocial intervention or methods such as telemedicine (continuous and right communication through phone calls, email, and other tools) are necessary for preventing suicide.

**Keywords:** Drug overdose, Mental health services, Suicide

## Introduction

Suicide is known as one of the most important causes of death around the world (1). It is the second cause of death in adolescents after accidents (2). World Health Organization estimates that by the year 2020, about 1.53 million people will die from suicide and 10-20 times more people will attempt suicide (3).

The rate of suicide is one of the many factors that reflect the mental health of a population. Severe suicide thoughts, plans for suicide, and suicide attempts are surprisingly common in the general population (4). In the past few decades, death caused by suicide in Iran reached 4.7 per 100,000 in 2015 (5), which is an alarming upward trend in suicide rate (6). Iran has the highest increase in completed suicide among Eastern Mediterranean Region during recent decades. The most prevalent methods of suicide in Iran are drug use and self-immolation (7). Drug use is the most common method for attempting suicide in Iranians probably because of its availability (7-9). Some studies show that the majority of people who attempt suicide had a large number of stressful life events and are distressed; therefore, contact with health care services is frequent in the period before their death (10). There was a tenfold increase in suicide within the next year for patients reporting frequent thoughts of self-harm after routine screening, that shows the importance of suicide risk assessment (11). Most suicide victims are not regarded as being at high immediate risk at their last contact with mental health services. So mental health care providers should perform an accurate suicide risk assessment and post-discharge treatment planning for all patients rather than specific initiatives for those known to be at highest risk (12,13).

That is why recognizing suicide warning signs in this period might help prevent suicide in these people.

In this study, an attempt was made to identify the rate of mental health care system contact during the last year before the suicide commission in Iran.

## Materials and Methods

In a questionnaire-based cross-sectional study in 2014, 231 individuals who had committed suicide by taking a drug overdose and referred to the Poison Center of Loghman-Hakim were assessed. The associations between demographic characteristics

including age, gender, education, and marital status with the rate of mental health care system contact were examined during the last year before the suicide commission. The prevalence of mental health care system contact in Iran is unknown so that it should be considered 50% for the sample size calculation. As a result, the sample size was 231.

Inclusion criteria included the patients with the age of 17-64 years, having Iranian nationality, having a good physical condition to respond to questions and surveys, the consent to participate in the study, having a degree of mental health and awareness to understand questions (Lacking delirium and psychotic symptoms), having a person being able to get along with patients and the suicide attempt by taking drug overdose.

Exclusion criteria included the inability to participate in the study by expression of their experiences for any reason, such as lack of interest, diagnosis with acute psychosis or severe depression.

The study's statistical analysis was done using SPSS Version 19. Data analysis was done by using t-test, Chi-square ( $X^2$ ), and Fisher's exact test. Fisher's exact test was used because some of the variables in the sample included cells with less than five individuals. Analyses with a  $p$ -value  $\leq 0.05$  were considered statistically significant.

## Results

A total of 231 adults with mental illness, including 109 men and 122 women, participated in the study. The mean age was 29 years old, with a standard deviation of 4.11. The demographic characteristics of samples are provided in table 1. 143 (62%) patients had used mental health services. Women to men ratio in the utilization of mental health services was 2/1, respectively. No significant difference was found in age between men and women who had used mental health services ( $p=0.077$ ). There was not a significant correlation between age groups and the use of mental health services ( $p=0.75$ ). The average age of those who had not used the service was 28 years, and the mean age of those who had used the services was 31 years which shows no significant correlation between the age and use of services ( $p=0.063$ ).

There was a significant positive relationship between using and not using mental health services and suicide

**Table 1.** Demographic characteristics of subjects who had attempted suicide using drugs and toxins (231 = n)

		Frequency	Percentage	p-value
<b>Gender</b>	Male	109	47.2	0.588
	Female	122	52.8	
<b>Place of residence</b>	City	228	98.7	0.238
	Village	3	1.3	
<b>Marital status</b>	Married	109	47.2	0.614
	Single	102	44.2	
	Divorced	17	7.4	
	Widowed	1	0.4	
	Unknown	2	0.9	
<b>Having child</b>	Yes	88	38.1	0.086
<b>Accommodation status</b>	Private house	117	50.6	0.363
	Rented house	122	48.5	
	Unknown	2	0.9	
<b>Employment status</b>	High income	96	41.6	0.066
	Housekeeper	62	26.8	
	Retired or disabled	10	4.2	
	Student	32	13.9	
	Soldier	4	17.3	
	Unemployed	6	15	
	Unknown	3	1.3	
<b>Education</b>	Illiterate	10	4.3	0.765
	Below diploma	68	29.4	
	Diploma	104	45.0	
	Collegiate	48	20.8	
	Unknown	1	0.4	

( $p=0.008$ ). From 231 suicide victims, 143 (62%) patients had used mental health services.

There was also a significant positive relationship between psychiatric illness and mental health services utilization ( $p\leq 0.0001$ ).

#### **Visiting psychiatrist or psychologist**

Sixty-one patients (26.4%) had visited a psychiatrist, 25 patients (10.8%) had visited a psychologist, and 12 patients (5.3%) had visited both psychiatrist and psychologist during the last year before their suicide commission. In other words, 49 patients (21.6%) had only visited a psychiatrist, and 13 patients (5.7%) had only visited a psychologist.

Twenty-four patients (10.4%) said that despite having felt the need to consult with a psychiatrist, psychologist or counselor in the past year, they had not visited any of them.

#### **Visiting other therapists**

One hundred twenty-seven patients (55%) had met other therapists for mental health or psychiatric problems or problems related to smoking, alcohol, or other substances during the last year before their suicide commission. Of these, 43 patients (18.6%) also had met psychiatrist or psychologist. In other words, 96 patients (41.6%) had only met other therapists for mental health or psychiatric problems or problems related to smoking, alcohol or other substances (96 patients had not met psychiatrist or psychologist).

Other therapists who were selected by the subjects, included general practitioners (68 cases, 29.4%), counselors (29 cases, 12.6%), and other medical specialists (28 patients, 12.1 %), apothecary (21 patients, 1.9%), social workers (17 patients, 4.7%), prayer writer (17 patients, 4.7%), energy therapist (5 cases, 2.2%), acupuncturist (4 cases, 1.7%), and

spiritualist (2, 9.0%), hypnotherapist (2, 9.0%), homeopathic therapist (1, 4.0%), yoga therapist (1, 4.0%), conjuror (1 case, 4.0%) and other unspecified therapists (1 case, 4.0%).

### Psychiatric problems

The most common reason for referral among those who had referred to a therapist were sleeping problems, depression, aggression, anxiety, and family problems (Table 2).

### Psychiatric hospitalization

Fifteen patients (5.6%) had a history of psychiatric hospitalization during the last year before the suicide commission. Nine of these patients had one

hospitalization, three patients had two hospitalizations, two patients had three times, and one patient had five hospitalizations in the last year before the suicide commission.

The most common psychiatric medications taken by patients during the last year before their suicide commission was benzodiazepines and selective serotonin reuptake inhibitors, respectively (Table 3). Some people were taking more than one medication.

### History of suicide

Fifty-two patients (22.5%) of the studies' population had a history of a suicide attempt. Of these, 27 (11.7%) once, 17 (4.7%) two or three times and six patients (6.2%) more than three times (4 to 10) committed suicide,

**Table 2.** The most common reasons for visiting a different therapist in 127 patients during the last year before their suicide commission

	Frequency	Percentage
Sleep problems	60	47.2
Depression	56	44.1
Aggression	55	43.3
Anxiety	48	37.8
Family problems	41	32.3
Headache or other body pains attributed to psychiatric problems	33	23.6
Addiction or smoking, alcohol or other substances	27	21.3
Family members problems with each other	24	18.9
Marital-sexual problems	21	16.5
Alcohol and drug addiction problems in family members	12	9.4
Obsession	8	6.3
Psychiatric disorders of family members	5	3.9
Counseling before marriage	4	3.1
Paranoid or psychotic symptoms	3	2.4
Educational or upbringing problems	2	1.6

**Table 3.** List of psychiatric medications taken by the patients during the last year before their suicide commission

	Safe consumption		Suspicious consumption	
	Percentage	Frequency	Percentage	Frequency
Benzodiazepines	35.9	83	2.6	6
Selective serotonin reuptake inhibitors (SSRI's)	16.5	38	5.6	13
Sedatives (Other than those specified)	12.1	28	3.5	8
B receptor blockers	6.9	16	3.5	8
Atypical antipsychotics	5.2	12	3.9	9
Tricyclic antidepressants	4.8	11	3.9	9
Zolpidem	3.9	9	0.9	2
Typical antipsychotics	3.5	8	3.5	8
Lithium	1.7	4	0.9	2
Other anticonvulsants (Other than carbamazepine and valproate)	1.7	4	0.9	2
Carbamazepine	1.3	3	0.4	1
Serotonin and norepinephrine reuptake inhibitor (SNRI)	0.4	1	0.4	1
Valproate	0.4	1	1.3	3
Other medications	1.3	3	1.3	3

and the number of suicide attempts was unknown in 2 patients. The maximum time between the first suicide attempt and the current attempt was 29 years, and the minimum was a few months with the mean of 4 years. Twelve patients attempted suicide for the first time within the past years, 24 patients within 2 to 5 years and 16 patients within five or more.

## Discussion

While it is not apparent to what degree mental health service providers can prevent suicide, the majority of suicide victims visited primary care providers, particularly older adults. In our study, of 231 suicide victims, 143 (62%) patients had used mental health services.

49 patients (21.6%) had only visited a psychiatrist, and 13 patients (5.7%) had only visited a psychologist, 12 patients (5.3%) had visited both psychiatrist and psychologist and 96 patients (41.6%) had only visited other therapists for mental health or psychiatric problems or problems related to smoking, alcohol or other substances (96 patients hadn't met psychiatrist or psychologist).

Morrison et al showed that almost 90% of victims of suicides used a health care service in the year before their death. Suicides averaged 16.6 visits per person, compared with 7.7 visits for non-suicides (14). This result is consistent with other studies.

Luoma et al showed that almost 45% of suicide victims had contact with primary care providers within one month of suicide (15).

In Ahmedani et al's study, nearly 50 % of suicide victims made a health care visit within four weeks of death. Primary care and medical specialty visits without a mental health diagnosis were most common in this period (16).

Renaud et al showed that only about 40% of people used health service within the last year preceding their death; however, the use of specialized mental health services was particularly uncommon (17).

In the present study, women to men ratio in the utilization of mental health services was 2/1. It showed a higher utilization of mental health services among women. This result is consistent with other studies. For example, this ratio in a study in Australia was 38/2 and in another study in Europe was 7/1 (18).

One important reason for this proportion is that women take better care of their health. More than 80% of the study population aged less than 40 years. This result is

consistent with other studies about suicide victim's age (15,17,18).

According to our study, married people take less care of their mental health. This result is also consistent with other studies (19).

With regard to education status of the studies' population, 79% of the patients had a diploma or a lower degree. Statistically significant differences were not found between health service utilization and educational status.

A significant positive relationship was found between using and not using mental health services and suicide ( $p=0.008$ ).

However, the key point is why those people who received mental health services have committed suicide. Maybe mental health providers do not pay enough attention to suicide risk assessment and underestimate this risk.

However, as Desai et al. showed, suicide rates may not be a good indicator of the quality of mental health care because of different variables that may cause a suicide attempt (20).

## Conclusion

Mental health care providers should perform a particularly profound suicide risk assessment and post-discharge treatment planning. Continued and more serious follow-up of these patients with strategies such as psychosocial interventions or methods such as telemedicine (Continuous and right communication through phone, email, and other tools) are necessary for preventing suicide.

## Limitations

Difficulty in data collection due to social stigma toward suicide, selection of participants only from hospital admitted cases, inappropriate physical and psychological situation of the poisoning patients for filling the questionnaire and sampling strategy were the limitations of this study.

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## Conflict of Interest

There is no conflict of interest to report by any of the authors.

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