

Investigating the Underlying Psychiatric Disorders Leading to Suicide among Patients Hospitalized in Poisoning Center in Emam Reza Educational, Research and Treatment Center in Mashhad, 2015

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ABSTRACT

Background: One of the most common causes of mortality in countries are drug induced suicide, the identification of underlying risk factors of which can play an important role in reducing its incidence as well as providing practical solutions.

Methods: All poisoned patients referred to poisoning treatment center in Imam Reza hospital (MUMS) were studied in a descriptive cross-sectional study in 2015 and based on selection criteria and using a researcher- developed questionnaire. Moreover, results were analyzed using SPSS21 and Exactly Fisher test.

Results: Among a total of 824 patients half of whom were men and the other half were women and with an average age of 27 years for men and 20 years for women, the most common underlying psychological factors in patients were holding under diploma, diploma, and above, impaired communication skills, depression, and Type B personality. Moreover, the most important types of impaired communication skills were poor stress and problem-solving management. Also, the drug-stimulant use was somehow associated with the same impaired inter-personal communications.

Conclusion: Before providing the necessary and sufficient training to children who inevitably need time, chronological age, bitter and sweet experiences in their lives, it is essential to avoid entrusting heavy responsibilities on them.

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► *Implication for health policy/practice/research/medical education:* Underlying Psychiatric Disorders Leading to Suicide

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1. Introduction:

According to the World Health Organization reports, suicide is among the 10 leading causes of death in countries with available data. Moreover, suicide is the third leading cause of death in some of these countries in the age group of 34 years (1). According to statistics published by the organization, more than 400,000 people worldwide commit suicide each year, but it seems that this number does not include all cases as well as a high percentage of cases are not reported due to social, cultural conditions and religious attitudes prevailing in the countries (2). According to the statistics, the highest and lowest rates of suicide relate to Hungary, SriLanka, and Finland, respectively, with 6.38%, 8.35% and 8.29%, and Mexico with 3.2 % per 100,000 populations (3). The suicide rate has been reported 2.12% per 100,000 populations in the United States (4). In Europe, ten suicide attempts occur for every suicide case (5). The available statistics only relate to those who referred to treatment centers and whose personal information has been registered. However, very large percentages of cases are not reported due to lack of referral to treatment centers. Interventions aimed at reducing the suicide rate were among the health priorities of WHO, developed and developing countries in the last decade (6). International statistics show that the suicide rate has been increasing in recent decades and its age pattern is changing. Research results have indicated that the suicide rate varies from 0 in Islamic countries to 28 per 100,000 populations in Slovenia. The suicide rate is estimated 6 to 8 per 100,000 populations in national studies (7).

In a study thinking rate, planning, and attempt to commit a suicide was reported, respectively 6%, 14%, and 3% during a lifetime in the city of Karaj and the same percentages in the past year, were

respectively 3%, 6%, and 1.2%, at the population level (8). Identification of risk factors of the suicidal behaviors is highly important in suicide prevention programs. The previous studies in Iran have shown that single men, newly married women, young females, and male students, unemployed men and housewives are at higher risk of the suicide attempt (9). Among Iranian attempters, in terms of temporal association with the attempt, psychosocial problems such as family problems, spouse problems, in adults, and conflict with parents in teenagers are the most common close stressors, and financial and occupational problems are the most common far stressors. Psychological problems as well as the psychiatric diagnosis for the suicide attempters are an issue that has been less studied in domestic studies (10).

Other studies have shown that more than 90% of the attempters had at least one Axis I or II psychiatric diagnosis. Among psychiatric diagnoses, major depression is the most common mental disorders seen in suicide attempters (11). According to statistics published by the Ministry of Health and Medical Education of Iran, on average, 13 suicide cases occur every day in the country with an average age of 29 years. According to these statistics, the ratio of male to female suicide rate is 5.2 to 1 and sometimes 5.4 to 1. Although the number of suicide cases in Iran is lower compared with many countries, but when compared with the figures recorded in previous years, these figures show a significant increase, to the extent that the suicide rate reached 4.6% per 100,000 population from 1.3 percent in 1984 (12).

In a study conducted in 2001 in Iran on the mortality rate in the eighteen provinces of the country, the data of which were collected from the 195 counties, suicide is the 9th and 10th leading cause of death in men and women, respectively, with 6.7% and 1.5% per 100,000 population. Global researches and domestic limited studies emphasize that the suicide prevention is possible (13). In a research conducted in Sweden, it was shown that the training of general practitioners in the diagnosis of depression and treatment of

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patients with suicidal tendencies will reduce the suicide incidence in society and this effect lasts up to 2 years (14). Also in another research, which was conducted in Shahr Babak, similar measures were taken and could control an epidemic during its early stages, the presence of any of the following factors may be a risk factor for suicide attempts: depression, particularly major depression, presence or history of psychosis, bipolar disorder, suicidal attempt history, a history of suicide in one of the family, drug and alcohol abuse, emotional problems in the past or divorce, disappointment, loneliness or isolation (15).

2. Materials and Methods:

In a cross sectional study, patients who were hospitalized because of a suicide attempt at Imam Reza Hospital in Mashhad from July 2014 to August 2015, were investigated based on a researcher-made questionnaire. To check the validity and reliability of this test, we used content validity method and Cronbach's alpha test, for internal consistency and retest on 20 subjects in two stages and within 10 days which the correlation coefficient between the two questionnaires was determined 0.85 and 0.88 respectively.

A) The minimum sample sized was calculated 330 for each group. In this study using the Cochran (degree of confidence, alpha is set 0.05) as well as the hospitalized patients were sampled using the inclusion and exclusion criteria.

B) Diagnosis of Psychological Disorder was based on deeply clinical interviews with a psychologist

C) Inclusion criteria: use of known drug or poison and lack of any physical-disease

D) Exclusion criteria:

1. Positive history of unintentional use of poison or wrong drug
2. All patients who were under 15 years.
- 3 Being divorced (because this is one of the risk factors for suicide)
5. Unknown poisoning

E) All data were analyzed and evaluated using the Spss16. Moreover, descriptive and inferential statistics and Exactly Fisher were

used to respectively analyze the data and to determine the relating between variables.

F) Ethical Considerations: All information, including the names of patients, type of exposed drug of poison, and the underlying psychiatric disorder and etc. were held confidential also from all patients is obtained informed consent.

3. Results:

The total number of patients who were eligible to enter the study was 824 people, 50% of them were women. Also a total of 50% of patients were married. The most prevalence rate was seen in women and men aged 16-25 and 26-35 years, respectively. In other words, the average, median, and mean in women and men were 20, 19, and 22 years and 27, 29, and 30 years respectively (Table 1).

The evident fact regarding type of drug was that only among women used corrosive chemicals, antibiotics, and vitamins and none of men used these 3 items, which was statistically significant ($P < 0.001$). In other cases, the drug use percentage was the same between men and women (Table 2).

In terms of educational level, patients holding under-diploma, diploma and above, respectively account for 65%, 31% and 14% of the total population, among whom the use of corrosive chemicals, antibiotics and vitamins were only seen in under-diploma sub-group ($P < 0.001$).

Studies show that depression and impaired communication skills, regardless of gender status, have been the most common cause of suicide ($P < 0.002$). On the other hand, impaired communication skills and personality type B in men (borderline and antisocial personality) as well as the use of narcotics and stimulants were the most common triggers for suicide attempts ($P < 0.05$). Moreover, depression and impaired communication skills are the most common causes of suicide attempts in women ($P < 0.05$). The evident thing was the important role of narcotics and stimulants in men, which was somehow only related to impaired communication skills P value < 0.03). Impaired communication skills in both men and women at an early age (16-30

Table 1: Frequency of age and sex in participants with underlying psychiatric disorder

Total	Male (%)	Female (%)	Age decade
247	82 (20)	165 (40)	16-25
350	206 (50)	144 (35)	26-35
185	103 (25)	82 (20)	36-45
42	21 (5)	21 (5)	>45
824	412	412	Total

Table 2: Frequency of Type of drug or poison in participants with psychiatric disorders

Percentage	Number of people	Type of drug or poison
24	200	Non-opioid analgesics
20	164	Anticonvulsants and benzodiazepines
12	100	Anti-psychotic drugs
8.5	70	Opioids
15	124	Cardiovascular
8	66	Chemical pesticides
8	66	Vitamins and antibiotics
1.5	12	corrosive chemicals
3	24	NSAID

Table 3: Prevalence of the type of mental disorder and gender in the participants admitted to Imam Reza Hospital (AS) in Mashhad in terms of the type of mental disorder and gender

Male (%)	Female (%)	Type of mental disorder
165 (40)	0 (0)	Personality disorder
62 (15)	206 (50)	Depressive Disorder
0 (0)	82 (20)	Group B personality traits
103 (25)	124 (30)	Impairment in communication skills
82 (20)	0 (0)	Associated with drug use

years) were the major cause of suicide and in older age (31-45 years). Moreover, the depression and the personality type B were the most common causes of suicide attempts in women and men, respectively ($P<0.003$). Moreover, in terms of the impaired communication skills in both genders and different age groups, the most common causes were respectively poor stress management (50%), poor problem-solving management (25%) and poor anger

management (25%). Also, no statistically significant difference was found ($P>0.05$).

In comparing the literacy level with the communication skills in patients under the diploma, the most important factors were, respectively, weaknesses in the stress management (40%), weaknesses in the problem-solving management (30%) and poor anger management (15%). Also, the defect rate was lower among patients holding diploma and above ($P<0.003$). Instead, in patients holding a diploma and

Table 4: Comparative Frequency of depending on the type of mental disorder, age and gender in participants of the admitted to Imam Reza Hospital (AS)

Age range and gender	Women (31-45) (%)	Men (16-30) (%)	Women (16-30) (%)	Men (16-30) (%)	Mental disorder
	247 (60)	62 (15)	412 (50)	82 (20)	Depression
	82 (20)	103 (25)	124 (30)	164 (40)	Impairment in communication skills
	41 (10)	164 (40)	62 (15)	82 (20)	Group B personality traits
	41 (10)	82 (20)	20 (5)	82 (20)	Resulting from the drug use

above, disorders such as depression (65%), borderline personality type (25%) were significantly more prevalent ($P < 0.01$).

4. Discussion:

One of the obvious findings of this study is the equal number of men and women attempting suicide with drugs or poison, which is different from the national average, which is due to the fact that men tried different ways as suicide attempts in Khorasan Razavi Province (14).

Moreover, the most common age of suicide attempts in men was similar to other domestic and foreign studies (13, 14), while in women, the average age in this study was 20 years old, which is far below the national average and other studies ($P < 0.003$), which was due to the poor economic status of families and acceptance of responsibility at a young age by the women in the family in this province (15, 16). On the other hand, the use of corrosive chemicals, vitamins and antibiotics was only observed in women (women with a high school diploma), which was significantly different from other studies ($P < 0.05$).

Aside from depression, many patients suffered from antisocial and borderline personality disorder as well as the use of narcotics and stimulants (Tables 3 and 4), to which no reference was made in other studies. This difference is due to the geographical location of the province in the proximity to the countries of Central Asia, including Afghanistan (7, 8, 17).

With respect to the impaired communication skills, there was no significant difference between men and women, different age groups, married and singles, which was consistent with other studies; however, there was a significant difference between the educational level and type of impairment in communication skills ($P < 0.002$), which was similar to other previous studies. This difference seems to be due to weaknesses in educating children by families and society (9, 18, 19).

5. Conclusion:

Since many family psycho-social factors are involved in the occurrence of suicidal behaviors, controlling all these factors in suicide prevention is difficult and almost impossible. Each of the approaches to suicide prevention, proportionally to the associated risk factors follow different goals. Diagnosis and treatment of neuropsychiatric diseases is among approaches, the effectiveness of which has been shown in international studies. Since depressive symptoms and impairment in communication skills are seen not only in depressed patients, but also those who stated family, occupational financial problems as reasons for their suicide attempt, the treatment of depression in suicide prevention may be an appropriate approach in spending the credits of this part of the mental health programs. Many health insurance systems refuse to pay treatment costs to people who have committed suicide in Iran, which

causes the number of fatal suicide or suicide attempts to be reported at much lower rates. Therefore, modification of the insurance status in order to fully cover special services to poisoned patients as well as psychiatric consultations can play an important role in reducing factors associated with failure to provide statistics and the incidence rate of poisoning.

In this regard, the Department of Mental Health, Ministry of Health and Medical Education, in order to perform their assigned duties, developed the program to integrate the primary prevention of suicide in the primary health care system with an emphasis on the depression treatment in 1999, in line with their duties.

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