Differences in Demographic and Psychological Variables in Suicide by Self-immolation and Poisoning

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ABSTRACT

Background: Self-immolation and intentional poisoning are two common methods for suicidal attempts in developing countries. Few studies have compared the characteristics of people who commit suicide by self-immolation or intentional poisoning. Hence, the aim of this study was to compare demographic, social, and psychological features between these two groups.

Methods: In the present study, patients hospitalized after suicide by self-immolation in Shaheed Motahari Hospital, Tehran, were compared to patients hospitalized due to intentional poisoning in Loghman Hakim Hospital, Tehran, in 2011. Demographic and psychological data were collected by interviews and questionnaires and analyzed by SPSS software (version 16).

Results: Overall, 50 patients with poisoning and 21 patients with self-immolation were enrolled in this cross-sectional study. The mean age of the patients in the poisoning group was significantly lower than the self-immolation group (P=0.007). The number of married people in the self-immolation group was significantly higher than the poisoning group (P=0.014). Substance abuse was also significantly higher (P=0.048) and educational level was significantly lower (P=0.023) in the self-immolation group. However, the prevalence of anxiety disorders (P=0.001) and adjustment disorders (P=0.007) was significantly higher in the poisoning group than the self-immolation group.

Conclusion: The findings of this study suggest the presence of differences between individuals who commit suicide by self-immolation or by poisoning in terms of demographic and psychological factors. Identification of these differences can be important in planning suicide prevention measures and education.

Keywords: Demographic Factors, Mental Illness, Personality Disorders, Poisoning, Self-Immolation, Suicide .

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INTRODUCTION

Suicide is defined as a life-threatening action that starts intentionally by someone who knows the outcome. Suicide is one of the main causes of death in the world. It is the 7th major cause of death in men and the 15th major cause of death in women. One million people throughout the world die due to suicide every year [1, 2].

Prediction and prevention of suicide is not any easy task. One of the most important programs of WHO is scheduled for prevention of suicide. In fact, the identification of the causes of suicide can be helpful for prevention planning.

Methods of suicide are diverse throughout the world. Drug poisoning and self-immolation are two common methods of suicide in Iran. Therefore, we compared individuals who commit suicide by these methods in terms of demographic and psychological factors in order to assess their plausible differences.

Some demographic factors that increase the risk of suicide are age, gender, race, psychosocial factors, economic and family status, social status, and availability of mental health services [3, 4].

The method used for suicide is another factor that helps predict the risk of suicide. Suicide by gun and poisons are the most common methods of suicide among women and men [2].

The choice of successful or unsuccessful method of suicide varies across

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different cultures and it is determined by the availability of the tools [5]. Thus, attention to the usual methods of suicide in various geographic areas can be very useful and important for the development of regional suicide prevention programs [2], for example, limited access to the tools used for suicide can be an important factor in preventing it [1]. Suicide by self-immolation has been mentioned in various references for long and it has faced psychiatrists, trauma and burn specialists and the whole society with a great challenge [6]. To date, several reports have been published on people committing suicide by self-immolation or intentional poisoning; however, there is little information on such cases in Iran.

Rezai *et al*. compared the warning signs before suicide by poisoning or self-immolation in Kermanshah in 2011 and they found some statistically significant differences between these two groups. Based on their findings, individuals who had committed suicide by poisoning had been looking for lethal substances before suicide more than the other group. Mood changes, especially depression, lack of interest in work and education, and audacious behaviors were significantly higher in poisoning group than the other group. In addition, the behavioral warning signs of suicide were significantly higher in the poisoning group than the other group. It indicated that the poisoning group had programmed for suicide for a longer time. This study showed that the warning signs of suicide by poisoning or self-immolation are different; thus, prediction and prevention of self-immolation is more difficult [2]. Also, the proportion of women and married people and their mean age were significantly higher in the self-immolation than the other group. The education level was significantly lower in the self-immolation group than the poisoning group. Other studies have stated that individuals who attempt suicide by self-immolation have their own characteristics which are different from people who commit suicide by poisoning [7-10].

MATERIAL AND METHODS

The present study is a cross-sectional study. Due to the small size of the target population, all of the patients who were admitted to Shaheed Motahari Hospital, Tehran, due to self-immolation in the second half of 2011 were enrolled in the study. On the other hand, some of the patients who were admitted to Loghman Hakim Hospital, Tehran, due to self-poisoning in the same duration were randomly enrolled in the study.

A questionnaire containing demographic and social information was completed by the patients after their initial stabilization and medical management. Then, two questionnaire, MCMI II (Millon Clinical Multiaxial inventory II) and SCID (Structural Clinical Interview for DSM IV Disorders) were completed by a psychiatrist. Data interpretation and diagnosis were performed by a psychiatrist, SPSS software version 16 was used for analyzing the collected data. Quantitative data were presented as mean±SD while qualitative data were presented as numbers and percentages. Quantitative data were compared using independent t-test and the qualitative data were compared using Chi-square test and Fisher's exact test. P-values less than 0.05 were considered to be statistically significant.

All guidelines of the Declaration of Helsinki were observed in all stages of the study and written consent was obtained from all patients participating in this project and their personal information was not published.

RESULTS

A total of 71 patients with poisoning and 21 patients with self-immolation were included in the study. The mean age of poisoned patients (24.3±7.2) was significantly (P=0.007) lower than the mean age of the self-immolation group (32.1±11.2). More than half of the poisoned patients were single while the rate was nearly 24% in the self-immolation group (P=0.014). There were not any widowed or divorced patients in the poisoning group, while the corresponding values were 4.8% and 11.3% in the self-immolation group, respectively. Substance abuse was significantly (P=0.048) more prevalent in the self-immolation group than the poisoning group (28.6% Vs. 10%). The education level of the self-immolation group

was significantly lower than the poisoning group (P=0.023).

There was not any statistically significant difference between the two groups regarding gender distribution (P>0.05). In addition, statistical analysis did not show any significant differences between the groups in the past history of attempted suicide, history of suicidal ideation in the previous year, time of suicide, and religious beliefs (P>0.05). Although the differences between the two groups in employment status, alcohol abuse, and the place of suicide were not statistically significant, the differences might have been considerable and likely to be significant, if the sample size had been larger.

The prevalence of anxiety disorders and adjustment disorders were significantly higher in the poisoning group than the self-immolation group (P<0.001 and P<0.007, respectively). The difference was not significant between the two groups in terms of other disorders, such as personality disorders, but somatoform disorders and adjustment disorders were observed only in the poisoning group.

DISCUSSION

The most important finding of the present study was that some demographic features such as age, and marital status were different between the groups. It is noteworthy that although the difference was not significant between the two groups in terms of some variables, the difference might have been considerable and likely to be significant if the sample size had been larger. In the present study, the mean age of the patients was significantly higher in the self-immolation group than the poisoning group. This finding was similar to previous studies, including two studies conducted by Rezai et al. [2, 10-13]. In the present study, similar to previous studies, education level was much lower in the self-immolation group than the poisoning group. Although there was not any significant difference between the two groups regarding the number of patients who had college education, 38% of the self-immolation patients were illiterate or had a lower level of education, while this rate was 26% in the poisoning patients. Previous studies have

shown lower levels of education in self-immolation group. In a different study, it was demonstrated that almost all patients who attempted suicide by self-immolation in Ilam province were illiterate [14]. Two other studies in Iran indicated that more than 90% of suicidal patients were illiterate or had low education levels [15, 16]. In another study, 75% of women with self-immolation had low education levels [11, 17-19]. Rezai et al. suggested low education level as a risk factor for self-immolation attempt [14].

This conclusion may be justified through the fact that education increases knowledge and self-esteem of individuals and enables them to deal with problems in ways other than self-immolation. In fact, education can enhance problem solving ability. In addition, educated people are probably more aware of the consequences of self-immolation.

Another finding of the present study was that most people in poisoning group were not married (52%), while most of the patients in the self-immolation group were married (47%). Theodorou et al. observed that the proportion of single people in the self-immolation group was significantly higher than that of the control group who were randomly burnt [13]. Nevertheless, most published studies indicate that most cases with self-immolation are married [16-19].

Many studies have shown that the majority of people who commit suicide suffer from mental illnesses [15, 20]. It is said that depression is one of the predictive factors of suicide, and there is a strong association between suicide and depression [21, 22].

Rotschild and his colleagues showed that a third of the self-immolation patients studied by them, were treated for psychotic illnesses. They stated that in the other one third of the patients, abnormal or unusual behaviors were reported by their relatives and friends. In most cases, reactive depression is involved in such behaviors. In contrast to these findings, Makhlouf and his colleagues showed that only 38% of the patients had mental illnesses [8]. In the present study, almost all patients in both groups suffered from mental illnesses or personality disorders. However, the prevalence of anxiety and

adjustment disorders was significantly higher in the poisoning group than the self-immolation group (P=0.001 and P=0.007, respectively). Anxiety disorders and major depression were the most common disorders in both groups. Antisocial and borderline personality disorders were the most important personality disorders in this study; however, there was not any difference between the two groups in this regard (P>0.05).

Ahmadi *et al*. have stated that mental disorders do not influence and push individuals to self-immolation [21]. Other studies have suggested the presence of schizophrenia, depression, and personality disorders in 71%, and severe psychiatric disorders in 60% of self-immolation cases [22]. Another study showed that 63% of self-immolation patients had been previously diagnosed with psychiatric disorders [7].

In the present study, almost all patients who attempted suicide by poisoning or self-immolation suffered from psychiatric disorders, especially anxiety disorders, major depression, and personality disorders, such as borderline and antisocial personality. However, the prevalence of anxiety and adjustment disorders was significantly higher in the poisoning group than the self-immolation group. Considering these findings, it can be stated that identifying individuals with the potential for attempting suicide is very difficult, yet this terrible phenomenon may be largely avoided by educated and informed population.

Table 1. The comparison of the prevalence of mental disorders in the two groups.

Group	Self-immolation (N= 21)	Poisoning (N= 50)	P- value
Major depression	47.6	60	0.337
Anxiety disorders	28.6	72	0.001
Substance abuse	9.5	16	0.714
Bipolar disorder	14.3	16	1
Alcohol abuse	14.2	12	1
Somatoform disorder	0	6	0.55
Adjustment disorder	0	26	0.007
Schizophrenia	4.8	2	0.507

Table 2. The comparison of the prevalence of personality disorders in the two groups.

Group	Self-immolation (N= 21)	Poisoning (N= 50)	P- value
Schizotypal	19	12	0.468
Avoidant	9.5	12	1
Compulsive	4.8	12	0.665
Passive aggressive	28.6	20	0.43
Borderline	42.8	50	0.581
Antisocial	28.6	40	0.427
Self-definite	14.3	8	1
Aggressive sadistic	14.3	24	0.527
Narcissistic	4.8	16	0.426
Dependent	9.5	2	0.15
Schizoid	4.8	0	0.296

CONCLUSSION

Based on the findings of this study, suicide, especially by poisoning take places at younger ages (minimum of 15 years old). In fact, 14% of poisoning patients were student. Therefore, preventive interventions must be initiated from younger ages, especially since school. These interventions should include training in life skills (problem-solving ability, decision making ability, the ability to cope with stress and excitement, and so forth), so that the person would be prepared to face daily life problems.

Other preventive measures can be training in the management of peer group relationships which is even more effective than the education of the parents. Parents also have a prominent role in choosing the right and approved friends and teaching appropriate behavior.

In this study, married women had mostly used self-immolation method, and most of them had history of marital conflict. This finding suggests that it is necessary for all couples to participate in premarital educational classes.

Given the high prevalence of borderline and antisocial personality disorders in this study, setting up specialized centers for treatment and rehabilitation of people with personality disorder seems essential.

In general, it appears that the preventive measures should include life skills training in

adolescents, readily available psychiatric services, training programs for general practitioners who are at the forefront of detection and treatment of mental disorders, restricting the ways of suicide in high-risk groups, and providing readily available counseling services, such as relief lines (consultant voice).

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