ORIGINAL ARTICLE

Oman Medical Journal [2015], Vol. 30, No. 3: 173–180

The Risk of Repetition of Attempted Suicide Among Iranian Women with Psychiatric Disorders as Quantified by the Suicide Behaviors Questionnaire

Jalal Shakeri, Vahid Farnia, Nasrin Abdoli, Mohammad R. Akrami, Farid Arman and Hania Shakeri*

Psychiatry Department, Kermanshah University of Medical Sciences, Kermanshah, Iran

ARTICLE INFO

Article history:
Received: 1 February 2015
Accepted: 7 April 2015

Online:
DOI 10.5001/omj.2015.38

Keywords:
Suicide; Psychiatry; Suicide, Attempted; Iran.

ABSTRACT

Objectives: The factors associated with repetition of attempted suicide are poorly categorized in the Iranian population. In this study, the prevalence of different psychiatric disorders among women who attempted suicide and the risk of repetition were assessed. ***Methods:*** Participants were women admitted to the Poisoning Emergency Hospital, Kermanshah University of Medical Sciences following failed suicide attempts. Psychiatric disorders were diagnosed based on the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) symptom checklist. Risk of repetition was evaluated using the Suicide Behaviors Questionnaire-Revised (SBQ-R). ***Results:*** About 72% of individuals had a SBQ-R score >8 and were considered to be at high risk for repeated attempted suicide. Adjustment disorders were the most common psychiatric disorders (40.8%). However, the type of psychiatric disorder was not associated with the risk of repetition (p=0.320). Marital status, educational level, employment, substance use, history of suicide among family members, and motivation were not determinant factors for repetition of suicide attempt (p=0.220, 0.880, 0.220, 0.290, 0.350 and 0.270, respectively). Younger women were associated with violent methods of attempted suicide, such as self-cutting, whereas older individuals preferred consumption of poison (p<0.001). Drug overdose was more common among single and married women whereas widows or divorcees preferred self-burning (p=0.004). ***Conclusion:*** About 72% of patients with failed suicide attempts were at high risk for repeated attempts. Age, marital status, and type of psychiatric disorder were the only determinants of suicide method. Adjustment disorders were the most common psychiatric disorders among Iranian women. However, this did not predict the risk of further attempts.

The existence of psychiatric disorders has been demonstrated in over 90% of people who attempt suicide.[1] These patients are susceptible to repeated attempts, which results in a higher rate of morbidity and cost to the healthcare system.[2,3] The increased incidence of suicide among Iranian young adults has been shown during recent years[4,5] emphasizing the need for preventive strategies to reduce the imposed financial, medical, social, and economic burden.

Various factors may be associated with increased suicidal ideation including social and familial problems (unemployment and being single[6]), mental disorders (including substance use[7] and alcoholism[8]), and previous attempted suicide.[2,3,9] Environmental conditions, such as social and familial problems, can affect suicide risk[10] and since these factors may differ across countries the importance of identifying the related factors in each nation is essential. Until now, no investigation has identified the risk of repeated attempted suicide among Iranian patients with psychiatric disorders.

Suicide is a multifactorial complication resulting from complex interactions between psychological, biological, and social issues.[11] Therefore, to understand the related risk factors, biological studies as well as epidemiological investigations may be needed. Psychiatric disorders are a major determinant of suicide attempt risk.[12,13] Previously, Baillargeon et al,[14] showed that an increased risk of suicide can be observed in major depression disorder, bipolar disorder, schizophrenia, and in patients with a non-schizophrenic psychotic disorder. Here, the prevalence of various psychiatric disorders among Iranian individuals with failed suicide attempts was assessed. The purpose of this study was to determine the most common psychiatric disorders associated with attempted suicide. The

*Corresponding author: hania.shakeri@gmail.com

risk of repeated attempted suicide was assessed using a revised version of the Suicide Behaviors Questionnaire (SBQ-R). Identifying the disorders related to suicide has a predictive value and may be helpful in implementation of preventive strategies among affected individuals. Detecting patients who are at high risk of repeated attempted suicide may assist clinicians to apply more cautious therapeutic procedures among these patients.

METHODS

In this descriptive cross study, women who attempted suicide and were referred to Poisoning Emergency Hospital, Kermanshah University of Medical Sciences were investigated. The hospital specializes in psychiatric disorders and has a devoted emergency section for suicide and poisoning.

In our study, patients were assured about the confidentiality of their information in order to increase responsiveness. Written consent was obtained from each patient or her caregiver before enrollment. Participation in the investigation was voluntarily. The study was approved by the research ethics committee of Kermanshah University of Medical Sciences. Data was collected over a period of six years, between 2008 and 2013.

Women who attempted suicide and were admitted in the emergency ward were invited to participate in this investigation. Patients from the critical care unit were not recruited. According to the algorithm for management of patients with recent suicide attempt,[15] patients were initially evaluated to assess medical stability. After toxicology screens and medical stabilization, patients were admitted into a safe environment with 24-hour observation and suicide precautions. Careful histories including risk factors for suicide were obtained. Physical examinations and mental status assessment were performed. Patients were referred to an appropriate facility to coordinate care with specialists. Patients included in the study declared that this was their first attempted suicide. Declaration of attempted suicide was confirmed by the patients' caregiver or a family member. Patients who were unwilling to participate in the investigation were excluded as well as those with medical or neurological conditions that would render them incapable for a protracted interview, or who denied commitment of suicide attempt. Here, we only investigated women who attempted suicide, and those who performed deliberate self-harm (DSH) were excluded since DSH can be observed among people under stress and is used as a means of coping.

Demographic characteristics including age, marital status, educational level, occupation, past medical and psychiatric history (including any history of drug abuse) were collected as well as information relating to the history of attempted suicide in the family, number of suicide attempts, utilized method for attempted suicide, and suicide motivation. The data was collected and indexed using pre-prepared forms. The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) symptom checklist was used, which can identify 29 different psychiatric disorders.[16,17] However, since most of the patients were unable to participate in long and time-consuming interviews, eight major disorders including dysthymia, major depression, generalized anxiety disorder (GAD), phobia, personality disorders, obsessive compulsive disorder (OCD), adjustment disorders, and psychotic disorders were selected and assessed. The following aspects were evaluated to diagnose these disorders based on DSM-IV instrument and diagnosis based on the following features:

Dysthymic disorder. Diagnosed based on the patient having a depressed mood more days than not, as indicated either by subjective account or observation by others, for at least two years and the presence while depressed of at least two of the following symptoms: poor appetite or overeating; insomnia or hypersomnia; low energy or fatigue; low self-esteem, poor concentration or difficulty making decisions; feelings of hopelessness; no major depressive episode; no manic, mixed, or hypomanic episodes. Additionally does not meet criteria for cyclothymic disorder; not superimposed upon another psychosis; not due to medical condition or substance use; symptoms cause significant distress or impairment in functioning.

Major depression. Diagnosed based on at least five of the following symptoms present during the same two week period, with at least one being a depressed or irritable mood and/or diminished interest or pleasure: a >5% weight change; sleep disturbance; psychomotor agitation or retardation; low energy; negative self-attitude; impaired concentration;

recurrent thoughts of death, or suicide attempt or plan; and not coincident with a mixed episode; drug-induced or induced by a medical condition; and not superimposed upon another psychosis.

Generalized anxiety disorder. Diagnosed based on excessive anxiety and worry for at least a six-month period; subject finds it difficult to control the worry; restlessness; being easily fatigued; difficulty concentrating or mind going blank; irritability; muscle tension; sleep disturbance; the anxiety, worry, or physical symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning; and not due to medical condition or substance use, and not just occurring during episode of mood, psychotic, or pervasive developmental disorder.

Phobia. Diagnosed based on fear of circumscribed stimulus; exposure provokes anxiety; avoidance or endured with intense anxiety; interference with activities or marked distress about having fear; recognizes fear as unreasonable or excessive; phobic stimulus is unrelated to content of another disorder.

Obsessive compulsive disorder. Diagnosed based on obsessions defined as recurrent and persistent thoughts, impulses, or images that are experienced, at some time during the disturbance, as intrusive and inappropriate and that caused marked anxiety or distress; thoughts, impulses, or images are not just excessive worries about real-life problems; attempts to ignore or suppress thoughts, impulses, and images, or to neutralize them with other thought or action.

Psychosis disorder. Diagnosed based on two (or more) of the following, each present for a significant portion of time during a one-month period (or less if successfully treated): bizarre delusions; hallucinations; disorganized speech (frequent derailment or incoherence); grossly disorganized or catatonic behavior; negative symptoms, i.e., affective flattening, alogia, or avolition; social or occupational dysfunction; continuous signs of disturbance for at least six months, which can include prodromal and residual periods; and not due to substance use or medical condition.

Personality disorders. Diagnosed based on an enduring pattern of inner experience and behavior that deviates markedly from the expectations of the individual's culture; the enduring pattern is inflexible and pervasive across a broad range of personal and social situations; the enduring pattern leads to clinically significant distress or impairment in social, occupational, or other important areas of functioning; the pattern is stable and of long duration, and its onset can be traced back at least to adolescence or early adulthood; the enduring pattern is not better accounted for as a manifestation or consequence of another mental disorder; the enduring pattern is not due to the direct physiological effects of a substance or a general medical condition.

Adjustment disorders. Diagnosed based on development of clinically significant emotional or behavioral symptoms in response to an identifiable psychosocial stressor; significant impairment in social, occupational, or academic functions; the stress-related disturbance does not meet the criteria for another specific disorder; once the stressor (or its consequences) has terminated, the symptoms do not persist for more than an additional six months.

The time taken for assessment of psychiatric disorders was about 30–40 minutes. The forms and checklists were filled out by the research team with the help of a psychologist. The diagnosis was finally confirmed by an expert psychiatrist via a clinical interview. All the interviews were performed by a psychiatrist. A psychiatry resident and a social worker were also present.

The SBQ-R is a validated questionnaire to identify patients at risk of attempted suicide. The admissible sensitivity (80%) and specificity (91%) of this questionnaire among adult psychiatric inpatients has been well-documented.[18] The questionnaire consisted of four items that evaluated a different dimension of suicidality. Item-1 taps into the lifetime suicide ideation (or suicide attempts), item-2 assesses the frequency of suicidal ideation over the past year, item-3 taps into the threat suicide attempt and, finally, item-4 evaluates the self-reported likelihood of suicidal behavior in the future. The total score ranges from three to 18. Scores greater than 7 in the general population and ≥8 among patients with psychiatric disorders are considered high risk of suicidality.[18]

The questionnaire used in this study has previously been validated in Farsi.[19]

All statistical analysis was performed using SPSS, version 18 (SPSS Inc., Chicago, USA). Categorical variables were expressed as frequency and continuous variables were described as mean ±standard deviation (SD). Chi-square test was used to identify differences in suicide methods, educational level, occupation, and motivations between various psychiatric disorders. Comparison of means was performed using one-way analysis of variances (ANOVA). A p-value <0.050 was considered significant.

RESULTS

A total of 400 patients with mean age of 27.7±9.4 years were included in the study. Most of the women were married (42.5%), employed (61.8%), and had low level of education [Table 1]. The majority of patients declared that this was their first attempted suicide (n=290; 72.5%), whereas two and three attempts were observed in 98 patients (24.5%) and 12 patients (3%), respectively. Two hundred and seventy patients (67.5%) had no previous contact with psychiatric services. Only 16.3% of subjects (n=65) had previous history of admission in psychiatric wards. The most commonly utilized method for attempted suicide was burning with fire (43.5%) followed by drug overdose (36.3%). History of addiction and drug abuse was detected only in 15.8% of patients.

The most common psychiatric disorder detected among our patients were adjustment disorders (40.8%). Major depression, dysthymia, personality disorders, psychotic disorders, OCD, phobia, and GAD were detected in 89 (22.3%), 49 (12.3%), 36 (9%), 32 (8.0%), 20 (5.0%), 10 (2.5%) and 1 (0.3%) patients, respectively. The most common motivations for suicide attempt were family problems and emotional failure (37.3% and 36.3%, respectively).

Based on interpretation of SBQ-R scores, the patients were divided into two groups. Two hundred and eighty seven patients (72%) had SBQ-R score ≥8 and were considered to be susceptible to repeated suicide. Marital status, educational level, employment and the type of psychiatric disorder had no significant influence on SBQ-R score (p=0.220, p=0.880, p=0.220, and p=0.200, respectively). A history of admission in psychiatric wards, drug abuse, and of attempted suicide among family members were also not associated with risk of repeated attempted suicide (p=0.290, p=0.290, and p=0.350, respectively). The effects of motivation of the suicide attempt on SBQ-R score were also insignificant (p=0.270) [Table 2]. Patients who had SBQ score ≥8 were significantly older showing that younger ages are associated with lower risk of repeated attempted suicide (p<0.001). Single and married individuals had tried to commit suicide with overdose consumption

Table 1: The baseline characteristics among patients who had attempted suicide.

Category	Number
Marital status	
Single	144 (36.0%)
Married	170 (42.5%)
Divorced/widow	86 (21.5%)
Educational level	
Illiterate	69 (17.3%)
Primary	124 (31.0%)
High school	120 (30.0%)
College	58 (14.5%)
University education	29 (7.3%)
Previous history of admission in psychiatric wards	
Yes	65 (16.3%)
No	335 (83.8%)
Employment	
Employed	247 (61.8%)
Unemployed	153 (38.3%)
Suicide attempt	
First	290 (72.5%)
Second	98 (24.5%)
Third	12 (3.0%)
History of suicide attempts among family members	
Yes	52 (13.0%)
No	348 (87.0%)
History of drug abuse	
Yes	63 (15.8%)
No	337 (84.3%)
Motivation for suicide	
Emotional failure	145 (36.3%)
Educational problems	20 (5.0%)
Problems with family members	149 (37.3%)
Financial difficulties	42 (10.5%)
Other	44 (11.0%)
The applied method for suicide	
Overdose	145 (36.5%)
Poison	70 (17.5%)
Self-burning	174 (43.5%)
Self-cutting with knife	11 (2.8%)
Psychiatric diagnosis	
Dysthymia	49 (12.3%)
Major depression	89 (22.3%)
Generalized anxiety disorder	1 (0.3%)
Personality disorders	36 (9.0%)
Obsessive compulsive disorder	20 (5.0%)
Adjustment disorder	163 (40.8%)
Psychotic disorders	32 (8.0%)
Phobia	10 (2.5%)

Table 2: The effect of various factors on risk of repetition of suicide attempt assessed by the Suicide Behaviors Questionnaire-Revised (SBQ-R).

Category	SBQ-R score *		*p*-value**
	≥8	<8	
Marital status			
Single	98	48	
Married	128	42	0.220
Divorced/widow	63	23	
Educational level			
Illiterate	50	19	
Primary	89	35	
High school	89	31	0.880
College*	40	18	
University education	19	10	
Employment			
Employed	181	66	0.220
Unemployed	106	47	
Suicide attempt			
First	210	80	
Second	60	38	0.420
Third	9	3	
Previous admission in psychiatric wards			
Yes	49	16	0.290
No	238	97	
History of drug abuse			
Yes	43	20	0.290
No	244	93	
History of suicide among family members			
Yes	39	13	0.350
No	248	100	
Motivation for suicide			
Emotional failure	104	41	
Educational problems	17	3	
Problems with family members	108	41	0.270
Financial difficulties	25	17	
Other	33	11	
Psychiatric diagnosis			
Dysthymia	32	17	
Major depression	65	24	
Generalized anxiety disorder	1	0	
Personality disorder	28	8	
Obsessive compulsive disorder	15	5	0.200
Adjustment disorders	109	54	
Psychotic disorders	28	4	
Phobia	9	1	

** The values in the SBQ-R scores represent the number of patients in that category.*
*** p-values for the Pearson Chi-square test between categorical variables.*

of pills whereas divorced and widowed participants tried self-burning more frequently (p=0.004). Other factors such as educational level, number of suicide attempts, history of suicide attempt among family members, motivation, substance abuse, and employment were not related to a preferred method (p=0.090, p=0.860, p=0.240, p=0.850, p=0.590, and p=0.740, respectively). Patients with dysthymia, major depression, and phobia preferred overdose with pills as a suicide method whereas self-burning was more common among patients with GAD, personality disorders, OCD, adjustment disorders, and psychotic disorders (p=0.030). Age was also a determinant of suicide method. Self-cutting using a knife was more frequent among younger individuals whereas older patients used poison in their attempt to commit suicide (p<0.001).

DISCUSSION

Estimation of the risk of repeated attempted suicide is a major clinical challenge. Identification of those at risk is of great clinical importance because it can help to implement preventive strategies. Many factors have been described to be associated with repeated attempted suicide. Previously, Leon et al,[2] and Oquendo et al,[3] reported that patients who attempt suicide are at greater risk of further attempts. In our study, 72% of individuals who had committed at least one suicide attempt were at high risk of repeated attempts based on SBQ-R scores.

The variables associated with repeated attempts are poorly described. Previously, Sheikholeslami et al,[20] reported a higher risk of repeated attempted suicide among Iranian people who had psychiatric comorbidity and were receiving poor social support. Our study revealed a significant high risk of suicide repetition among women suffering from psychiatric disorders, which is in line with Sheikholeslami's report and confirms that psychiatric disorders are major determinants of repetition of attempted suicide. Similarly, Ghanizadeh et al,[21] reported that nearly 70% of Iranian adolescents who committed suicide had at least one psychiatric disorder. Another study[22] illustrated that people in Iran who committed suicide were more likely to have no psychiatric disorder and were less likely to have used alcohol as part of the attempt, but were more likely to have been assaulted physically or verbally compared to people in developed countries.

Studies looking at the effect of other factors are also conflicted. For instance, Gladstone et al,[23] showed that suicide ideation is a major factor associated with repeated risk of attempted suicide; however, this finding was not supported in a study by Mann et al.[24]

The increased risk of suicide and attempted suicide among psychiatric patients has been demonstrated.[25] We tried to identify the effect of various factors, including types of psychiatric disorders, on risk of repeated attempted suicide among admitted women. Our results showed that the most common psychiatric disorder accompanied with attempted suicide were adjustment disorders. However, no significant relationship was found between the two. Previous investigations on healthy Iranian soldiers with no history of psychiatric disorders revealed an association between personality characteristics (especially neuroticism) with increased risk of suicide.[26] This finding illustrates the probable role of personality disorders as a determinant of future attempted suicide. However, our outcomes showed no significant association between personality disorders and SBQ-R score.

Previously, Hakansson et al,[27] showed that younger ages and substance users are associated with repeated attempted suicide. This conflicts with our results: younger ages were associated with lower SBQ-R scores and no relationship with drug abuse could be detected with risk of repetition. One reason for this difference could be the difference in the study populations.

Hakansson et al,[27] investigated individuals in the criminal justice population in whom the violent behaviors and cognitive problems were more common whereas we investigated the female population who had committed at least one attempted suicide, but had no background criminal history. Furthermore, Eskandarieh et al,[28] showed that younger aged Iranians (<30 years) were associated with more frequent suicide attempts.The mean age of attempted suicide in Iran has been reported to be between 10 to 30 years old.[29,30] In this study, no direct effect of age and risk of repetition could be detected. However, younger ages were associated with adoption of more violent methods, which can lead to higher rate of successful suicide.

Beghi and Rosenbaum[31] demonstrated that a history of previous attempted suicide was the strongest risk factor for further attempts, which is in line with our findings. Moreover, other factors including mood disorders, personality disorders, unemployment, and medium age were presented as risk factors for repeated attempted suicide attempt based on the findings in their review article. Our results revealed no significant effect of educational level and employment on the risk of repeated suicide attempts. Ghaleiha et al,[32] demonstrated that lower level of education increases the risk of suicidal behavior, which contradicts with our results. Previously, Nojomi et al,[33] showed that younger age and unemployment were independent predictors of suicide attempt, which was not consistent with our findings. One reason for this conflicting outcome could be differences in study population. Nojomi et al,[33] investigated the general population in Iran whereas we have estimated risk of repetition among women with psychiatric disorders who had already attempted suicide.

The existence of a background psychiatric disorder could affect and camouflage the influence of employment. Although adjustment disorders were the most common psychiatric disorders among patients who attempted suicide, the risks of repetition were not associated with the type of psychiatric disorder. One reason for these conflicting results can be the complexity of contributory dynamics of suicide and the existence of various factors affecting these relationships which may also differ between individuals.[34,35] The conflicting results between our results and Beghi and Rosenbaums' findings can be due to unadjusted analysis for these variables.

Self-burning was the most commonly utilized method for attempted suicide among the participants of the present study, which is in line with previous findings in Iranian women.[36] However, self-burning is a rare method in industrialized nations.[37] Previously, Shojaei et al,[36] described the relationship between age and method of suicide. Their study illustrated that, in Iran, younger people attempted suicide utilizing highly violent methods whereas older people chose methods such as hanging and poisoning. In line with those findings, our study showed the similar results and violent methods such as self-cutting with knife were more frequent among younger patients whereas consumption of poison was commonly detected in older patients. However, in contrast with Shojaei et al,[36] our investigation showed no effect of educational level on the utilized method. Furthermore, Rezaei et al,[38] showed that utilization of different methods (self-immolation vs. self-poisoning) could be associated with different warning signs, which emphasizes the importance and predictive value of these signs in order to prevent suicide. Our results also showed that different psychiatric disorders maybe associated

with a different preferred method for suicide, which is in line with previous literatures.[39]

Our study showed that 72% of Iranian women who attempted suicide were at risk for repetition. In this regard, Malakouti et al,[40] demonstrated that 3.3% of the Iranian general population attempt suicide. When comparing our results with those obtained from healthy subjects in Iran, the noticeable higher risk of attempted suicide among women with psychiatric disorders was evident.

The factors that may affect susceptibility toward suicide are numerous. A lower level of social support has been related to higher risk of deliberate self-harm.[41] However we did not evaluate the extent of social support in this study. Other important issues such as cultural and environmental factors were also not addressed. A lack of data to evaluate the effect of socioeconomic status contributed as a major limitation of this study.

CONCLUSION

Our study looked at the prevalence of different psychiatric disorders among Iranian women who attempted suicide, and the risk of repeated attempts was evaluated using the SBQ-R. About 72% of patients had SBQ-R score ≥8 and were considered to be at high risk for repeated attempted suicide. The most common psychiatric disorder among patients who attempted suicide were adjustment disorders. The psychiatric disorder type was not associated with the risk of further attempts. Marital status, educational level, employment, number of previous attempts, substance use, history of suicide among family members, and motivation were also not determinant factors. Drug overdose and self-burning were the two most commonly utilized methods for attempted suicide. Age, type of psychiatric disorder, and marital status were found to be the only determinants of suicide method.

Disclosure

The authors declared no conflict of interests. The study was financially supported by Kermanshah University of Medical Sciences.

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