Is Suicide Predictable?

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Abstract

Background: The current study aimed to test the hypothesis: Is suicide predictable? And try to classify the predictive factors in multiple suicide attempts.

Methods: A cross-sectional study was administered to 223 multiple attempters, women who came to a medical poison centre after a suicide attempt. The participants were young, poor, and single. A Logistic Regression Analiysis was used to classify the predictive factors of suicide.

Results: Women who had multiple suicide attempts exhibited a significant tendency to attempt suicide again. They had a history for more than two years of multiple suicide attempts, from three to as many as 18 times, plus mental illnesses such as depression and substance abuse. They also had a positive history of mental illnesses.

Conclusion: Results indicate that contributing factors for another suicide attempt include previous suicide attempts, mental illness (depression), or a positive history of mental illnesses in the family affecting them at a young age, and substance abuse.

Keywords: Women, Prediction, Multiple suicide attempts, Iran, WSPFQ

Introduction

Each year, one million people terminate their own lives worldwide (1). However, in spite of decades of clinical, scientific, and policy efforts aimed at improving methods of predicting and preventing suicide (2), the rates of suicidal thought and attempt have greatly increased in each country (3). This rate is considerable in the developing countries (4).

Suicide is a controllable death and a problem of public health worldwide (5). Approximately, half of the suicide's cases occurred in Asia and among rural communities (6). Meanwhile, the frequency of suicide in the Western countries has been generally lower than those in Asian countries (7). Additionally, suicide is considerable among women in the field of mental health (8). Several

studies have shown that suicide is more prevalent among females (68.8%) than males (35.2%) (9). Databased research has disclosed that suicide events among women are linked with the individual characterizations in developing countries. As the research finding show, the suicide rate of younger age (20-29 years old) (7,10,11) married women is 57.2% (10), younger age women with past life history of suicide is 42.2% (12), and those with mental disorders is 63% (13,14). The methods of attempting suicide was with drug (65.4%) and the life quality of attempters were bad and very bad (15). There was little information (16) about causal factors of suicide among Iranian women (17,18). Attempted suicide is a

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multidimensional matter (7,19) that psycho-bio-social factors play important roles on it (12,20,21). The purpose of the study was to identify the predictive factors of suicide among Iranian women, and in order to determine the women who were at risk of attempting suicide.

Materials and Methods

Participants

This is a cross-sectional study. Some 250 women who had attempted suicide and referred to Loghman Hakim Hospital Poison Centre (LHHPC) from 2006 -2008 in Tehran, Iran, were asked to participate. To qualify for participation, they had to meet the following inclusive criteria: 1) age from 15-60. 2) normal IQ and an education level of literacy 3) a history of attempted suicide at least two times (multiple suicides). Researchers made an initial selection according to the admission notes of nurses and doctors in Emergency Room (ER) in the LHHPC Ward, and also based on even numbers in the study sample. The participants who met the conditions of these prior criteria were selected. They took part in a short interview by researchers. They were asked to sign a statement that had been approved by the Ethical Committee of the Medical Faculty of Shahid Beheshti Medical University of Tehran, Iran. To further qualify they filled up an anonymous questionnaire (regarding ethical aspects) that took 30 to 45 minutes. Twenty-Seven of these 250 did not sign the ethical statement. Therefore 223 multiple attempters of suicide were studied.

Methods and Study Design

The questionnaire had two separate sections; personal and psychological information. It included highlighted topics such as age, marital status, education level, living conditions, physical and mental illness in personal and family history. Pilot study was performed with Women Suicide Predicting Factors Questionnaire (WSPFQ) with (Cronbach Validity, α=0.75) (12). The questionnaire was supported by a psychiatrist and two clinical psychologists. Predictive factors of suicide included a list of factors, which are reported in literature reviews (19). They consist of times,

methods, the idea of attempted suicide, a previous history of suicide, history of substance abuse and physical and mental illness in personal and family history.

Data analysis was carried out by SPSS analyzing program, version 17 (SPSS Inc., Chicago, IL). The means, ±SD, range, and percentile were used to show discrete variables. Logistic Regression Analysis was used to determine the factors, which could predict a suicide attempt.

Results

A total of 223 women completed the questionnaire of the study. The mean age was 29.5, SD ±5.51, years old. The most important aspects of the study in Table 1 includes, age distribution revealed 43.9% in age class 21-30, and 35.45% among 15-20 year-olds. Most women who were at younger ages had taken part in the study. However, it illustrated that the education status was 71.3% in high school subset, and 66.4% were single without any income. Furthermore, 79.8% of them came from the south of Tehran, which is the poor area of the city.

Table 1: Demographic features of the study sample in predictive factors in women who attempted multiple suicides

Variables	n=223	n=100
Age group (yr)		
<20	79	35.4
31-40	98*	43.9*
41-50	29	13
51-60	11	4.9
Education	6**	2.7**
Higher(non-uni)	159	71.3
University	48	21.5
Marital status		
Single	148	66.4
Married	56	25.1
Living area *		
South of Tehran	178	79.8
Out of Tehran	39	17.5
Employment status		
Unemployed(house wife)	182	81.6
Governmental employment	19	8.3

* Maximum   ** Minimum

ITLA* Classified according to Iran map of Tehran Living Area

Table 2 shows the pattern of results, multiple suicide attempters would show a more significant psychopathology than single suicide attempters would. If we studied the single suicide attempters, it would be impossible to achieve a great range of psychopathology (12,20). The overall results using Logistic Regression Analysis for psychopathology to predict suicide was significant. The results showed that 86.1% suicidal attempted had more than three- times experiences. It has been founded that 84.8% of subjects were about to have the idea of attempting suicide, and 87.9% were depressed and 77% had a positive family history of mental illnesses.

Table 2: The frequency of predictive factors of women who attempted multiple suicide (according to (WSPFQ)

Variables	n=223	n=100
Times of suicide		
> 3 times	192	86.1
<2 times	18	8.07
Previous suicides		
Yes	184	82.5
No	20	9
Mental disorder(depression		
Yes	176	78.9
No	38	17.4
Suicidal(idea of attempt suicide		
Yes	189	84.8
No	10	49
Mental disorder in family		
Yes	172	77.1
No	41	18.6
Substance abuse		
<1 year	111	49.8
>2 years	95	4.9
Physical illness(epilepsy)		
Yes	91	40.8
No	103	46.2
The method of suicide		
Psychotropic drugs	98	44
Non-psychotropic drugs	101	45.3

Additionally, 49.8% of subjects were substance abusers over one year, and 42.65% of them had a background of up to two years. However, half of

the suicidal attempters' cases were under treatment with psychotherapeutic drugs (45.3%), and the remaining had a history of using other types of drugs. It would be appropriate to say that in psychopathological considerations drugs had an important role in this study.

Index table reveals greater prediction in multiple attempted suicides. The results of Logistic Regression Analysis (P<0.05) indicated that there were strongly significant associations between categorizing predictive factors in multiple attempted suicides, as seen below:

1. The time of attempted suicide. 2.. Previous attempted suicide 3. Mental illnesses such as depression in personal history. 4. Suicidal (idea of attempted suicide). 5. Mental illnesses in the family. 6. Age. 7. Substance abuse.

Discussion

This is the first study of predictive factors in multiple attempters of suicide among Iranian women in an Emergency Poisoning Centre in Iran. It seems that most women who participated in the study were at a young age. This is in agreement with a report from an Arab country (22,23). In spite of religious rules that consider suicide a great sin, suicide has a high rate among females in Islamic countries (7,22). It is embarrassing for women to seek help to solve their problems, when they have suicidal ideas about terminating their lives (23). Many verses in the Holy Quran have mentioned that suicide is prohibited, and it is *Haraam* (24).

The study noted that approximately, half of the participants had a literate education status and had been living in a lower-class area of Tehran. Another study in India reported that most cases of attempted suicide were among those living in socio-economically deprived areas (25). In addition, our research showed that most participants were housewives without any income. Various studies indicate that psycho-social factors such as low economic condition may have a potential role among suicidal population in both Eastern and Western countries (5,7,15,25,26).

The present study has clarified that culture may directly affect behavior and thinking. The Iranian Islamic Revolution emphasizes on having a valuable knowledge among women. In addition, mass media broadcasting represent some programs regarding women and modern life. Those cases neglect these aspects of their lives (12). It seems that they had poor social problem-solving skills, and little logical knowledge against more rational ideas about how to handle their lives' negative events (27). It would be essential to manage a woman's life. They did not have enough academic information because they were young and of a low social class (28). In fact, we had dealt with a large number of sick women who suffered from depression, epilepsy and substance abuse for many years. They reported who had attempted suicide more than three times (as many as 18 times) (7).

The resultants strongly supported our hypothesis that only multiple attempters of suicide can be utilized by the predictive factors in our study (20,29). Furthermore, we reported prior suicide attempts and suicidal ideation during our study. Can we say that genetics, according to biological factors (15) played an important role in this study? Besides, the participants reported mental illnesses in their family history. Did this also play a role? These critical aspects should also be considered in research. First, they had a positive predisposing factor and background (30). Second, mental illness was presented by their families. They grew up with family arguments, conflicts (31), and feelings of separation (32). It led to hopelessness, negative thoughts about the meaning of life, poor self-image, lack of self-confidence, and lack of good communication (33). These factors were not studied in this research. However, other studies have confirmed this point of view (7,14). This claim is not affirmed yet.

Third, Iran had been exposed to Iraq-Iran war between years 1980 and 1988. The participants were beginning their young age during the war. This had led to many problems such as: insecurity, hopelessness, loss of income and inadequate housing. A World Health Organization (WHO) study indicates the most important effects of social change conditions such as war are physical and mental disorder (34). It is more likely that these social changes are related to the development of inadequate personality and irrational beliefs (35). Participants used psychotropic drugs and other kinds of drugs in multiple attempted suicides. Numerous studies established the popularity of drug usage among women who attempted suicide in Iran (16,17,21,27,36), which is in agreement with our findings. It is not strange that most participants used drugs, because drugs were available for patients who have had mental disorders (37) for a long time. A lot of studies were done in the Medical Poison Centre in Iran that is in agreement with this study (7, 12, 15).

One study has shown that hyper-regulation in Iran is associated with higher suicide rates (9). The results are not in strong agreement with this idea. We mentioned before that multiple suicide attempts are disputable according to multidimensional factors. It is believed that attention should be paid to the psycho-bio-social factors in predicting suicide, and hyper-regulation is only a portion of the sociological factors in multiple suicide efforts.

In conclusion, the current study represents women associated with a history of multiple suicide attempts who have had special clinical features with a high degree of psychopathology. It provides a range of clinical tools to predict factors related to multiple suicide attempts. On this basis, we classified the predictive factors in suicide. These factors can be significantly predicted in multiple attempted suicides. These factors are: previous attempted suicide, the time of attempted suicide, mental illnesses such as depression in personal history, the idea of attempting suicide, mental illnesses in the family, age (young age), and substance abuse.

Limitations

In this study, we confronted two limitations. The first was the level of consciousness of the sample that attempted suicide and seemed to be not con-

scious of the environment. Therefore, the forms (WSPFQ) /Questionnaire were not filled up completely by all of them. The second, limitation was the co-operation of the sample. Twenty-seven of the sample population did not sign the ethical statement. Finally, 223 participants were studied.

In conclusion, the current study demonstrates that women with a history of multiple suicide attempts have special clinical features with a high degree of psychopathology. This psychopathology provides a range of clinical tools to predict factors related to multiple suicide attempts.

Ethical considerations

Ethical issues (Including plagiarism, Informed Consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc) have been completely observed by the authors.

Acknowledgement

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Index Table

Logistic Regression Analysis of Attempted multiple Suicide' Predictors among Women

Predictors	B	SE B	Wald's X^2	df	p	e^b (Odds ratio)
Constant	1.123	.201	4.376	1	.040	NA
Previous suicide (1= yes, 0= no)	2.868	1.184	5.868	1	.000	17.599
The time of suicide	2.077	.831	6.250	1	.001	7.982
Mental illness in ph~ (1= yes, 0= no)	.944	.416	5.148	1	.003	2.571
Suicide ideation (1= yes, 0= no)	1.513	.516	8.603	1	.031	1.266
Mental illness in fh~~ (1= yes, 0= no)	.860	.394	4.762	1	.010	2.364
Age	-1.323	.410	10.438	1	.042	.220
Substance abuse (1= yes, 0= no)	3.919	.386	103.324	1	.033	1.020
Test			X^2	df	p	
Overall model evaluation						
Omnibus Tests			9.142	1	.002	
Likelihood ratio test			43.903	1	.002	
Goodness-of-fit test						
Hosmer & Lemeshow			15.982	18	.463	
R^2 Indices						
Cox and Snell			.213			
Nagellcerke			.257			

~ Personal history ~~ Family history   Overall Percentage Correct = 75%

Predicted logit (Y=Suicide)= 1.123 + (2.868)* Previous suicide + (2.077)* The time of suicide + (.944)* Mental illness in ph+ (.860)* (1.323)* Mental illness in fh + (1.513)* Suicide ideation + (1.020)* Substance abuse + (-1.323)* Age.