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Investigating the effective factors of suicide

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Abstract

Introduction: Suicide is one of the most serious threats to human health in modern societies, which has drawn the attention of psychologists in recent decades. In order to prevent the unfortunate consequences of this phenomenon, it is necessary to study the contexts and causes which lead to it. Therefore, the purpose of this study was to investigate the factors affecting suicide in Hamadan province, Iran.

Materials and Methods: The statistical population of this mixed research (quantitative and qualitative) included 1055 people who had committed suicide in Hamadan province, in 2017 and 2018. Seventy-two of them were selected through convenient sampling method. They were interviewed and answered the researcher-made questionnaire. Data analyzed through descriptive statistics, variance analysis, independent and correlative t test, and context analysis.

Results: Depression (M= 21.28), crisis management (M= 19.23), economic problems (M= 18.18), feeling of loneliness (M= 18.18) and family or marital problems (M= 16.60) are the most important predictors of suicide in Hamadan province. Moreover, suicide in men is higher than women, and at the level of undergraduate education there are more suicide attempts.

Conclusion: Based on the findings, we can use strategies to reduce factors such as depression, economic problems, loneliness and family problems as well as using strategies to increase crisis management in individuals to reduce the rate of suicide attempt.

Keywords: Depression, High risk behaviors, Suicide

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Introduction

High-risk behavior is a serious general health issue in all social classes and has long been focused on by researchers (1). A group of high-risk behaviors are violent behaviors that can cause immediate physical harm; a suicide attempt is one of these traumatic physical behaviors (2). According to World Health Organization, 1,000 people die of suicide every day worldwide, and the rate of suicide attempts in the world has increased by 60% in the last 45 years. According to World Health Organization, this rate is 10 to 40 times higher than successful suicide commitment.

Studies over the last two decades have shown that suicide attempts in Iran have been increasing rapidly to the point that Iran is ranked third in the world (both men and women), and Iranian

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women are ranked first in the Middle East in terms of suicide attempt (4).

The study of suicide attempts and the growing trend of this undesirable social phenomenon in different countries and Iran indicate the complexity of its causes. This has led many sciences to study the factors affecting suicide to provide solutions to reduce it (5).

Attempting suicide can have various causes. Movahedi et al. (6) believe that suicide is due to a set of intertwined and complex factors, and any single linear causal explanation of this issue will not present a proper understanding of this phenomenon. In some cases, this attempt can be caused by great human suffering, an acute social dimension problem (4). Fathi and Kayhan (7) believe that the frequency of stressful life events, lack of emotional support, and personality traits such as neurosis and mental disorders can predispose suicide attempts. In addition, life problems and pressures can play a role in suicide. When the problems are very severe and confuse an individual for a long time, they cause vascular and physical problems; on the other hand, they disturb the mental balance of the individual, which makes him commit suicide (8). However, studies on suicide do not have a long history in Iran, and suicide statistics are limited to epidemiological data in some provinces. The studies have attributed suicide attempts to chronic factors; however, a multi-factorial model based on suicide risk factors is needed to predict future cases (9).

Rahimzadeh, Kurd, and Oproz (10) found that individuals who cannot express their feelings report a higher rate of suicide. In addition, in explaining the role of social supportive factors in adolescents' suicide, Miller, Esposito, and Leichtweis (11) concluded that the suicide rate increases among adolescents who receive less social support from the school and family, and friends. Finally, Herro, Sabado, and Benito (12) concluded that the most critical risk factor for suicide in young people is mental illness, including depression. They believe that self-esteem, emotional adjustment, and social support can reduce the risk of suicide.

In general, psychologists believe that the frequency and the causes of suicide attempts vary according to the social conditions and geographical context (13); this led to contradictory results in research studies. Thus, since Hamadan is one of the provinces that have the highest rank in terms of suicide (14), and there is a gap in this area, the object of the present study is to investigate the demographic differences (e.g., age and gender) and the factors affecting suicide in Hamadan province. Accordingly, the following questions are posed. How prevalent are suicide attempts considering gender and the level of education? What are the most important individual, social, and family factors affecting suicide in Hamadan province?

Materials and Methods

The design of this research study is mixed-method, which combines quantitative and qualitative data in a single study. One of the instruments included an interview, a qualitative way of collecting descriptions of a phenomenon (15); it was used to investigate the causes of suicide. In addition, a researcher-made questionnaire was used to identify the causes of suicide. This part of the study was qualitative, Ex-post facto, or causal-comparative (16). Data analysis was performed at descriptive and inferential levels using SPSS software (version 23). At the descriptive level, frequency distribution tables, central tendency indexes, and measures of variability were used, and at the inferential level, the analysis of variance and independent t-tests were performed. In addition, content analysis was used to analyze the interviews.

The study population included those who committed suicide in Hamadan, Nahavand, and Famenin in 2017 and 2018. The reason for choosing these three cities was that they had a higher suicide rate (according to the reports of Hamadan provincial government office). One thousand fifty-five individuals committed suicide in these three cities in 2017 and 2018. It does not include those who did not go to the hospitals or died after committing suicide.

Due to the nature of the statistical population of the study (i.e., those who had attempted suicide), first, the necessary coordination was done with the relevant authorities; to visit the participants and fill out the questionnaire, the researchers referred to the hospitals in the province and asked for the list of the individuals who attempted suicide. They called the participants. The

inclusion criteria were suicide attempts two years before the study (i.e., 2017 and 2018) and self-confession. Otherwise, if the hospital reports introduced one who attempted suicide but did not confess (14 cases), that individual was excluded from the study.

The participants were selected and interviewed. They filled out the questionnaire. They were informed about the confidentiality of the data. The sample included 72 individuals who were selected through the convenience sampling method. Table 1 presents the response rate of the individuals who attempted suicide and were referred to the hospitals of Hamadan province (i.e., Hamadan, Nahavand, and Famenin).

Table 1. The frequency distribution of the population and the response rate

The investigation of telephone numbers	No.
No answer / off / unavailability and wrong numbers	633
Unavailability of the phone number and address	46
The telephone number of special places (e.g., prison, camp and dormitory)	15
Deaths	29
The recorded phone numbers of friends and acquaintances	96
Cases who refused to participate in the research study	124
Cases who did not confess their suicide attempts	14
Cases who did not present to fill out the form despite their agreement to participate in the study	26
The interviewed cases	72
Total	1055

As Table 1 shows, 1,055 telephone calls were made, and the numbers which were either incorrect or unavailable were removed from the list. Then, those who answered the calls were interviewed in person (i.e., 43 individuals). Next, however, those who promised to participate in the study but did not accept the face-to-face interview were interviewed through telephone (i.e., 29 individuals).

Research instrument

The quantitative data were collected through a questionnaire developed by the researcher to measure the factors affecting suicide. The validity of the questionnaire was examined through content validity. Two psychologists and two sociologists who were the faculty members of Bu-Ali Sina University reviewed the questionnaire. The agreement coefficients of the psychological part and the sociology part were 0.84 and 0.77, respectively, indicating the appropriate validity coefficients of the instrument. The reliability of the questionnaire was examined by Cronbach's alpha; it turned out to be between 0.68 and 0.80 for each of the studied factors. This questionnaire addressed 13 factors of impulsivity, hopelessness, religious attitude, loneliness, risk, absence, anxiety (cognitive dimension), anxiety (physical dimension), depression, crisis management, support network, marital conflict, and economic problems.

Results

In this section, first, the demographic characteristics of the participants are provided. Then, the quantitative findings of the questionnaire and the qualitative findings of the interview will be presented.

Table 2. Total number of population and sample considering the city of residence

City Famenin	Gender		Total	Sample size
	Girls	Boys		
Famenin	24	36	60	11
Hamedan	415	412	827	45
Nahavand	84	84	168	16
Total	523	532	1055	72

According to Table 2, 45 participants were from Hamadan, 16 were from Nahavand, and 11 were from Famenin. Also, 56 participants (77.8%) were male, and 16 (22.2%) were female. In term of educational level, 28 participants (38.9%) were undergraduate, 39 participants (54.1%) held diplomas and A.A., three participants (4.2%) held B.A., and two participants (2.8%) held M.A. or higher degrees.

In addition, 58.3% of the participants were in the age range of 16-25 years old, 23.6% were 26-35 years old, and 18.1% were over 35 years old. Moreover, 52.8% of the participants were single, 41.7% were married, and 5.5% were divorced. Furthermore, 48.6% were unemployed, 30.6% had part-time jobs, and 62.5% had fewer than 700,000 Tomans monthly income.

Table 3. The frequency of factors affecting suicide considering gender

Variables	Female			Male			Total		
	No	M	SD	No	M	SD	No	M	SD
Impulsivity	16	14.51	4.19	56	16.03	4.63	72	15.69	4.64
Hopelessness	16	14.64	2.70	56	15.68	3.35	72	15.45	3.51
Religious attitude	16	13.73	3.23	56	14.95	2.78	72	14.68	3.41
Loneliness	16	17.18	3.24	56	18.79	4.45	72	18.44	4.60
Risk	16	15.16	3.24	56	15.82	3.84	72	15.68	4.50
Absence	16	14.47	3.85	56	15.74	3.83	72	15.46	3.76
Anxiety (cognitive dimension)	16	15.26	3.43	56	15.84	4.46	72	15.71	4.96
Anxiety (physical dimension)	16	13.80	4.26	56	13.82	3.23	72	13.81	3.96
Depression	16	19.33	7.28	56	21.83	7.86	72	21.28	7.87
Crisis management	16	18.66	5.69	56	19.39	4.97	72	19.23	4.98
Support network	16	15.75	3.65	56	13.97	4.77	72	14.37	4.28
Marital conflict	16	15.52	3.68	56	16.91	4.12	72	16.60	3.78
Economic problems	16	16.73	4.26	56	19.43	5.42	72	18.83	4.86

According to Table 3, in females, depression (M= 19.33) and religious attitude (M= 13.73) had the highest and the lowest means, respectively. In addition, in males, depression (M= 21.83) and anxiety (physical dimension) (M= 13.82) had the highest and the lowest means, respectively. In general, depression (M= 21.28) and anxiety (physical dimension) (M= 13.81) had the highest and the lowest means in the sample, respectively.

Table 4. The results of the t-test comparing the differences between the two genders in terms of the factors affecting suicide

Variables	df	t	P
Impulsivity	70	-1.1	0.27
Hopelessness	70	-1.39	0.16
Religious attitude	70	-0.93	0.35
Loneliness	70	-1.14	0.25
Risk	70	-0.63	0.52
Absence	70	-1.06	0.29
Anxiety (cognitive dimension)	70	-0.31	0.75
Anxiety (physical dimension)	70	-0.08	0.99
Depression	70	-1.23	0.22
Crisis management	70	-0.44	0.65
Support network	70	2.16	0.03
Marital conflict	70	-1.36	0.17
Economic problems	70	-2.45	0.01

As Table 4 shows, females and males significantly differed in the support network and economic problems. In other words, females considered support networks more important, and males considered economic problems more important (i.e., the mean of support networks in females was higher, and the mean of economic problems in males was higher). The results showed that support network was more problematic for females than males, and economic issues were more problematic for males than females.

Table 5. The ranks of the factors affecting suicide

Variables	NO	M	SD
Depression	72	21.28	7.15
Crisis management	72	19.23	5.75
Economic problems	72	18.83	4.02
Loneliness	72	18.44	5
Marital conflict	72	16.60	3.62
Anxiety (cognitive dimension)	72	15.71	6.62
Impulsivity	72	15.69	4.83
Risk	72	15.68	3.64
Absence	72	15.46	4.20
Hopelessness	72	15.45	2.62
Religious attitude	72	14.68	4.59
Support network	72	14.37	2.97
Anxiety (physical dimension)	72	13.81	8.29

As it is evident in Table 5, depression (M= 21.28) gained the highest rank, crisis management (M= 19.23) ranked second, economic problems (M= 18.83) ranked third, loneliness (M= 18.44) ranked fourth, marital problems (M= 16.60) raked fifth, anxiety (cognitive dimension) (M= 15.71) ranked sixth, impulsivity (M= 15.69) ranked seventh, risk (M= 15.68) ranked eight, absence (M= 15.46) ranked ninth, hopelessness (M= 15.45) ranked tenth, religious attitude (M= 14.68) ranked eleventh, support network (M= 14.37) ranked twelfth, and anxiety (physical dimension) (M= 13.81) ranked thirteenth. According to Table 7, the means of the five factors of depression, crisis management, economic problems, loneliness, and marital conflict were significantly higher than those of other factors.

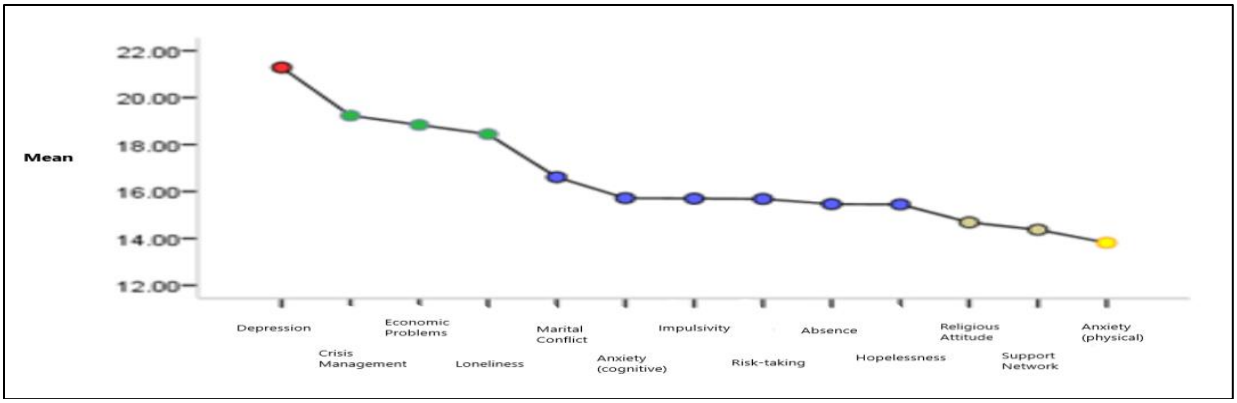

Figure 1. The comparison of the means of factors affecting suicide

Table 6. The content analysis of the interviews concerning the factors affecting suicide

Categories	Sub-categories	Frequency	Percent
Economic and welfare problems	Unemployment and poverty	20	27.7
	Lack of financial support	19	26.3
	Job failure	5	7
	High marriage costs	5	7
	Stress caused by socio-economic problems	5	7
	Lack of appropriate recreation and suitable recreational places	4	5.5
	Low quality of life	5	7
Compatibility and communication problems	Severe strictness	3	4.1
	Negligence	7	9.7
	Incompatibility with family issues (e.g., problem with parents' remarriage, incompatibility with stepmother)	5	7
	The tendency to do dangerous things	3	4.1
Addiction	The spouse' addiction	2	2.7
	The person's own addiction	7	9.7
	The family members' addiction	4	5.5
	The tendency to use drugs	2	2.7
Marriage problems	One's own divorce	3	4.1
	Parents' divorce	2	2.7
	Problems in marital relationships	8	11.1
	Infidelity	3	4.1
Family and emotional problems	Problem with one's own family	35	48.6
	Problem with spouse' family	4	5.5
	Problems due to family issues	3	4.1
	Love failure	15	20.8
	Leaving a cordial relationship, or losing a friend	3	4.1
Sexual abuse	-	3	4.1
Psychological problems	Humiliation caused by the feelings of absence and worthlessness	6	8.3
	Humiliation caused by being ridiculed	2	2.7
	Loneliness	3	4.1
	Identity problems	3	4.1
	Depression	8	11.1
	Lack of life expectancy	12	16.6
	Pessimism about the future	6	8.3
	Low tolerance threshold	6	8.3
	Lack of behavior control in emergencies	3	4.1
	High stress	7	9.7
Opposition to traditional values and beliefs	-	2	2.7
Physical problems	Problems caused by certain diseases (e.g., heart disease, diabetes)	5	7
	Problems caused by accidents and incidents	3	4.1

In addition to the questionnaire, interviews were used to examine the factors affecting suicide. Accordingly, the data concerning the factors affecting suicide was coded and categorized through content analysis; they were classified in several main categories and several sub-categories. What follows shows the findings of the interviews concerning the factors affecting suicide.

As Table 6 shows, factors such as family problems (48.6%), unemployment and poverty (27.7%), and lack of financial support (26.3%) were more prevalent. In addition, factors such as high curiosity, parental divorce, and feelings of inferiority (2.7%) were the least dominant factors affecting suicide from the perspective of the interviewees. From the interviewees' point of view, the factors affecting suicide can be divided into nine main categories, including several sub-categories. For a better description and examination, all categories and characteristics are mentioned below.

Economic and welfare problems: This category refers to the individuals' explanation and interpretation of economic and life problems. It includes the six sub-categories of unemployment, lack of financial support, job failure, high marriage costs, lack of appropriate recreation, and suitable recreational places. For instance, one participant stated that there was no appropriate recreation and suitable recreational places in our neighborhood; the only recreation of all youth was hookah, cigarettes, and drugs, and the only recreational place was the hookah house. If someone did not go there, he had to stay home alone.

Compatibility and communication problems: The participants talked about the problems of adaptation and communication with others (e.g., family, friends, and community) and the way to control them, and the importance of parents' relationships with children. This category includes the five sub-categories of the stress caused by economic and social problems, incompatibility with family issues (e.g., incompatibility with parents or stepmother), severe strictness, negligence, and tendency to dangerous actions. For example, one participant mentioned that although he was 18 years old, his parents treated him like a 4-year-old child; they did not trust him and controlled him strictly. This led to a lack of self-confidence, problems in communicating with others, and loneliness.

Addiction: This category refers to the problems caused by addiction and the effects and consequences of drug use. It includes the four sub-categories of spouse' addiction, one's addiction, family members' addiction (e.g., parents, brother, sister), and the tendency to use drugs. One participant stated that he lost his job due to drug addiction; addiction significantly impacted his behavior. It was the leading cause of his family and marital problems.

Marriage problems: This category presents the problems caused by divorce, marital relations, and the consequences in life. It includes the four sub-categories of one's divorce, parents' divorce, problems in marital relations, and marital conflicts. For example, one participant advocated that they could not agree on common issues in life, and a minor problem caused great trouble. They were always in conflict, which made their marital relationship stormy.

Family and emotional problems: This category refers to the emotional problems created due to various factors and the problems caused by relationships and family issues. It involves the five sub-categories of problems with one's own family, problems with spouse's family, family issues, love failure, and emotional problems caused by leaving intimate relationships (e.g., losing a friend). For example, one participant stated that he did not have a good view of life since he broke up with his fiancé. He wanted to be alone and felt depressed. Another participant mentioned that he was very lonely since his best friend broke up; his mood and behavior changed, and he was always angry.

Psychological problems: This category explains the participants' psychological problems; it includes the seven sub-categories of lack of life expectancy and pessimism, humiliation due to the feelings of absence and worthlessness, humiliation due to being ridiculed, loneliness, identity problems, depression, low tolerance thresholds, lack of control over anger, and high stress. For instance, one participant stated that he felt that he had fallen into a vortex full of problems; there was no way out; he was completely disappointed in life and had no positive feelings about the future. He felt that his life would not improve at all.

Sexual abuse: This category presents the problems caused by sexual abuse, its effects, and its consequences. As an example, one participant mentioned that he had been sexually abused due to his parents' negligence. Thus, he had been ridiculed and humiliated; he could not live a healthy life. He even left school and changed his habitat. However, neither did solve his problem.

Physical problems: This category elucidated the problems caused by injuries and physical diseases and their consequences. It includes two sub-categories (i.e., specific physical diseases and the physical problems caused by accidents and incidents). One participant stated that he had heart disease since he was a child, affected his whole life; he could not live as others do. He always felt sad and disappointed about this issue.

Opposition to traditional values and beliefs: This category explains the participants' opposition to traditional values and beliefs, especially parents'. One participant advocated that he did not have a positive view about his parents' traditional values and beliefs. He did not accept his parents' views on the type of clothing, the choice of friends, or the way of marriage.

Discussion

In this section, the research questions are answered based on the findings of the study. The first research question: How prevalent are suicide attempts considering gender and the level of education? The results showed that 22.2% of those who committed suicide in Hamadan province were female, and 77.8% were male. In addition, 38.9% were undergraduate, 54.1% held diplomas and A.A., and 7% held B.A. or higher degrees.

Many studies have been conducted on the epidemiology of suicide, which have been somewhat different considering different geographical regions and cultures. However, the findings of the present study are consistent with those of King et al. (17) and Faridpak, Nikakhtar, and Farkhani (18). King et al. (17) showed that young individuals of both genders committed suicide; the success rate of suicide was higher in men, and the suicide rate was lower among educated individuals. Furthermore, Faridpak et al. showed that men attempted more than 70% of suicides.

Several studies have also reported higher suicide rates among women than men (13, 19, 20). These studies reported that women were more likely to commit suicide for reasons such as the lack of financial independence, greater sensitivity, and vulnerability to the problems and attraction of others' attention. However, considering different circumstances in different geographical locations, men were more at risk of suicide due to economic reasons and subsequent marital conflicts. The research results clearly showed the impact of suicide in each society and culture.

Concerning the relationship between the level of education and the factors affecting suicide, the findings of this study are consistent with those of LeFevre and the U.S. Preventive Services Task Force (21). They showed that with increasing the level of education, the ability to manage personal accidents and crises would increase, and individuals would cope with failures; this ability may reduce the likelihood of the educated individuals' suicide attempts.

The second research question: What are the most important individual, social and family factors affecting suicide in Hamadan province?

As indicated, depression ranked first, crisis management, economic problems, and loneliness ranked second, marital problems ranked third, impulsivity, risk, anxiety (cognitive dimension) and hopelessness ranked fourth, and religious attitudes, support network, and anxiety (physical dimension) ranked fifth. Again, these factors were significantly higher than other factors.

Various studies have also shown that psychological problems such as depression were the leading cause of suicide (19,22,23). According to Park et al. (24), psychological problems (e.g., depression) and economic and family problems seriously increased the risk of suicide. According to Hashemifard et al. (25), in today's societies, especially in the context of Iran, individuals, especially adolescents, face despair and hopelessness, which are the result of the increase in social stresses (e.g., unemployment and poverty) as well as the modernization of traditional societies. These factors make people prone to various mental illnesses, such as depression. Thus, they attempt suicide to get rid of their negative emotions and distressing conditions.

Moreover, the results indicate that factors such as family problems (48.6%), economic problems such as unemployment and poverty (27.7%), and the lack of financial support (26.3%) were prevalent among those who attempted suicide.

The findings of the present study are in line with those of Arensman (26). One of the effective reasons for family tensions and problems in Iranian society may be the excessive comparisons. The comparisons between peers are not common in other countries. If a teenager and even an adult compare himself with others who have welfare and financial resources, he would feel deprived. Then, he strives to achieve his ideal life, which is not achievable due to his living conditions, facilities, and abilities. The consequence of this failure is family tensions. According to the theory of failure-aggression, it leads to violent behaviors, which may turn into suicide in extreme forms (27).

In other words, economic problems and the ensuing psychological pressures lead to family tensions, leading to violent behaviors such as suicide.

In addition, since all studies have some limitations, the limitations of this study included the possibility of accessing all individuals who had committed suicide two years prior to conducting this study. Moreover, the major problem of the present study was the possibility of accessing the same number of individuals who were introduced to the researchers.

Conclusion

Based on the findings of the study, it is suggested that the officials and stakeholders of the province cooperate with the responsible institutions concerning mental health and try to improve the mental condition of the individuals, especially depression, the ability to manage the crisis, and resilience. They also should pay special attention to the economic problems of people, especially the underprivileged. It may be possible to identify special low-income people in the community, provide them with special assistance under the supervision of the Social Security, Welfare Organization, or other responsible institutions, and reduce the grounds for suicide attempts.

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