Investigating the relationship between the demographic variables associated with suicide in different seasons, among suicidal people in the Shahid Mohammadi Hospital, Bandar Abass, Iran

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ABSTRACT

Introduction: Suicide is committed by a person himself or herself and whether conscious or semiconscious it is aimed to end one`s life. This action is not committed inadvertently or incongruously. However, it could be related to one`s unmet needs and feelings of despair. Studies on the prevalence of suicide are related to environmental and seasonal circumstances. As there are diverse populations in Bandar Abbas of different races due to its geographical position, and as its weather condition is different from the other parts of country there is no study with this regard. Hence, the aim of this research is to investigate the correlations between and among demographical variables and suicide in different seasons of the year. **Materials and Methods:** This study is a cross-sectional one. Participants included 80 persons who had attempted suicide and were hospitalized within 2011 in the Ebnesina Hospital of Bandar Abases, Iran. The variables under investigation are the suicidal patients` demographic characteristics, where, when, and how the person had committed suicide. All of these data were available in their profiles. These data were analyzed by using the SSPS software. **Results:** The results showed that 45% of the suicidal people were the young and adolescent. Also, 75.5% of these people were single and 22.5% of them were married. Most suicides occurred in summer, which makes up 41.3% of all the suicidal people. On the other hand 11.3% of the suicides were committed successfully and 88.7% of them had been unsuccessful; 42.5% of suicidal people had used drugs and 38.8% of them had used pesticides to commit suicide — 78.8% of these patients had psychotic disorders and 12.5% of them suffered from mental disorders such as schizophrenia. Furthermore, a significant relationship was found between seasons in which suicide was committed, marital status, age, mental illness, and educational and occupational characteristics of suicidal patients. **Conclusion:** This study showed that the most vulnerable people committing suicide were from among the young and adolescent. Singles had attempted suicide more than the married. Most of suicide attempters had used drugs to commit suicide. Generally, in the current study, some variables including season, marital status, age, history of mental illnesses, and educational and occupational variables were all associated with committing suicide.

Key words: Demographic variables, Iran, seasons, suicide

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INTRODUCTION

Suicide and attempted suicide is a public health problem and is considered an anti-social behavior. This incident is not only regarded as a personal or family disaster, but is also considered to be a social loss.[1] The suicidal behavior could range from suicidal thoughts, threats of suicide, and suicide attempts, to completed suicides.[2] According to the definition, 'Suicidal Thoughts' are defined as thoughts about dying, planning the time, place, and manner of committing suicide, as also its influence on others. Committed suicide' is defined as ending one`s life. If the injuries result in death it is called 'committed suicide' and if the injuries do not lead to death it is considered as an 'attempted suicide'.[3] Generally, suicide-related behaviors, attempted suicide or deliberate self-harm, are all considered as acts that result in non-fatal injury to the person who is attempting suicide. These kinds of behaviors are closely related to suicide. There are different psychological and social approaches for studying suicide. Emile Dorkheim has recognized an individual's social solidarity changes as a leading factor in committing suicide. He believes that as the degree of social solidarity is weakened, a person would commit suicide. In Freud's view, suicide is the result of psychological conflicts that arise in a person. According to Freud`s theory, suicide is the result of major depression caused by losing libidinal relations as a result of death, refusals or despair. Among the most common and the most debilitative mental disorders are mental illnesses.[4] Mental health is considered to be one of the most important factors in the promotion and development of human beings.[5] Cognitive psychologists believe that suicide is an example of problem-solving behavior. In other words, the inability to solve problems, which leads to the potential despair, will increase the probability of committing suicide in a desperate person.[6] Some research findings have contributed to the conflicting results of seasonal suicides. For example, Dorekhiem, the famous French sociologist, in his studies, has shown that the minimum suicide rate is in winter, while the maximum rate is in spring. Since then, in most of the studies that have been done in western countries, such a significant seasonal pattern is observed, where the rate of men and women committing suicide reaches the maximum rate in spring and the minimum rate in winter.[7,8] In their study, Rezaeian and Sharifi[9] have shown that the highest rate of suicide in Ilam, one of the western provinces of Iran, is in spring. In a review research on suicide risk factors, some factors such as mental illnesses, being female, being young, schizophrenia, and major depression have been proposed as risk factors for suicide.[10] According to the studies that have tried to identify the predicting factors of committing suicide in Iran, it has been found that being adolescent, being female, having a history of mental illnesses, using alcoholic drinks and tobacco during one`s life, and also unemployment, are among the independent variables that can predict attempted suicide.[11] On the other hand, the results of some studies[12,13] also show that factors such as marital discord, family moral issues, and social relationships are all associated with suicidal behavior. Furthermore, the results of some investigations[14-17] suggest that there is a significant relationship between a couple's physical abuse, their sexual abuse, having a medical and psychiatric history and committing suicide. In the case of students, suicide factors may be noted as health problems, anxiety, depression, and social maladjustments. Moreover, the rate of these factors is significantly higher in females than in males. Also, the risk of suicide is significantly associated with death, divorce, and conflict between parents, family financial problems, and addiction of parents to drugs and alcoholic drinks.[18] One study indicated that there is a significant relationship between suicidal thinking, depression, anxiety, and academic failure.[19] On the other hand, global-scale studies have shown that people with the average age from18 to 24 have the highest suicide rate.[20] According to the World Health Organization (WHO), suicide is currently becoming an increasing disaster in different societies. The WHO has estimated that by 2020, annually, one million five thousand1,005,000 people will die from committing suicide. Furthermore, more than ten to twenty times this rate will attempt suicide in the world. In Iran, this disaster is of utmost importance. However, in this country the suicide rate is relatively low when compared to other countries. This disaster is frequently committed among the young and adolescents. In 2001, the suicide rate in the country had been estimated as 4.4% people per 100,000 people; this means 5.7 of the men and 3.1 of the women per 100,000 people.[21] Investigating and analyzing the facts and figures of the suicide rate in Hormozgan, Iran, shows that this social tragedy has significantly increased recently in this province. Although when compared to other provinces of Iran, the suicide rate in this province is relatively low. The WHO has estimated that during 2004, about 98% of the total suicides had occurred in Hormozgan, while this rate in 2011 had been estimated as more than 712 cases. Therefore, the potential increase in the rate of this social tragedy needs critical and logical consideration.[22,23] Bandar Abbas is a coastal city with many job opportunities, and therefore, it hosts a lot of non-native immigrants. They come in search of employment, each from a different cultural background. A new problem that has arisen in this city is the population of the working class families of a usually low social and political status. Their diverse cuktural backgrounds have added to this problem. What also distinguishes this city from the others in Iran is its different tropical weather. The previous studies have discussed the relationship between year, season, and suicide prevalence. Because of a number of factors including non-native population and the increasing suicide prevalence in this city, compared to the previous years, we decided to conduct the present research. It hopes to study the relationship between demographical variables and suicide problems in different seasons, This research has been done on people who had committed suicide at Shahid Mohammadi Hospital of Bandar Abbas, in 2011.

MATERIALS AND METHODS

This research is of an analytical descriptive type. The participants of this study include all the patients who had suicidal experiences in Hormozgan, Iran, among whom

80 people were admitted to the Bandar Abass, Shahid Mohammadi Hospital, in 2011. For statistical analysis, the total number of people who committed suicide in 2011 and were taken to the emergency ward of the Shahid Mohammadi Hospital was determined. These people comprised the research sample. Why this hospital was selected for our study was that it is the only big specialized hospital in the province. It is equipped with a specialized psychological clinic and a big central emergency ward, for the patients of other hospitals if transferred here. The information used by the researcher are in two types. The first part includes the demographic information of the people and the second includes the questions related to different seasons of the year, the result of the suicide attempt, the time of suicide (Am.P.m), and the time of committing suicide and so on. An inventory was developed and validated by several Psychiatrists at the Psychological Department of the Psychological Clinic of Ebne-Sina Hospital in Bandar Abbas. Subsequently, with the approval of the head of Mohammadi Hospital along with an insurance of patients' anonymity the required information was derived from their files and sent to the Archives Records Unit of the Hospital. This was done after determining which patients were to be selected for this research in 2011.

The lists were completed by two skillful psychologists working carefully in two shifts (morning and evening). After the data collection was done, the obtained data were analyzed using the SPSS Software. The results showed that the suicide rate had increased dramatically. According to the World Health Organization report, in 2004, about 91 suicide cases were recorded. However, in the current study, regardless of the other suicide cases in other hospitals of Bandar Abass, in 2011, more than 80 suicidal patients were admitted to the Shahid Mohammadi Hospital.

RESULTS AND FINDINGS

Table 1 shows the demographic characteristics of the sample. Regarding the age of these suicidal patients, it can be inferred from the table that these patients were mostly between 14 and 24 years of age, who made up 65% of the total sample, and 27.5% of these suicidal people were between 25 and 34 years of age. Also 75.5% of the sample was single, while 22.5% of them were married. Regarding the occupational variable, it was found that pupils and college students had the highest suicide rate, which was 35%, and next came housewives, with a 30% suicide rate. As it is shown in the table, in the educational variable we can say that those who had lower academic degrees had a higher suicide rate. Also, it was found that 53.8% of the suicidal people were native to Hormozgan, while 34.3% of them were people who had migrated to this province from other cities. 63.8% of them were from the non-aboriginal suicide province and 36.3% of them were native to other provinces.

The data that has been summarized in the above table shows that the highest suicide rate had occurred in the summer, which made up 41.3% of the total sample. Next came winter,

with a 31.3% suicidal rate. This meant that most of suicides had occurred in the summer and winter seasons. Of the total attempts, 11.3% of all suicides had been committed successfully and 88.7% of them were unsuccessful. About 67.5% of the persons who attempted suicide had attempted it in the morning and 32.5% of them had committed suicide in the afternoon. Observations showed that 83.3% of this sample was of those who had attempted suicide for the first time.

Table 2 indicates that 42.5% of the sample had used drugs for committing suicide and 38.8% of them had used pesticides. In fact these two methods were the most common routes taken for committing suicide. With regard to the history of mental

Table 1: Demographic sample			
Variables	Groups	Descriptive indicators	
		Frequency	Percent
Age	14 to 24 years	52	65
	25 to 34 years	22	27.5
	35 to 44 years	4	5
	45 years	2	2.5
Marital status	Single	62	7.5
	Married	18	2.5
Job	Free	14	17.5
	Unemployed	11	13.8
	Employee	2	2.5
	Housewife	24	30
	Students	28	35
	Workers	1	1.3
Education	Illiterate	13	16.3
	School	27	33.8
	High school	1	1.3
	Diploma	38	47.5
	Associate degree	1	1.3
Native state	Expatriate	51	63.8
	Native	29	36.3

Table 2: Demographic sample suicide		
Variables	Descriptive indicators	
	Frequency	Percent
Suicide season		
Spring	7	8.8
Summer	33	41.3
Fall	15	18.8
Winter	25	31.3
Result of suicide		
Successful	9	11.3
Unsuccessful	71	88.7
Time of suicide		
Morning	54	67.5
Afternoon	26	32.5
Rank suicide		
First	67	83.8
Second	11	13.8
Third	2	2.5

illness, it was determined that 78.8% of the individuals suffered from psychotic disorders and 12.5% of these patients had a schizophrenic disorder. Hence, psychotic disorders were of the highest frequency [Table 3].

Table 4 shows the analytical findings of the study. As is indicated in the table, the suicide rate in terms of season with the statistical K-Square = 19.4, shows a significant difference at the level of α = 0.005. Also, the marital status with the base K-Square = 24.20 shows a significant difference at the level of α = 0.005. This means that married and single people differ significantly in committing suicide. The history of mental illnesses with the statistical K-Square = 124.7 shows a significant difference at the level of α = 0.001. Also the academic variable with the statistical K-Square = 80.40 shows a significant difference at the level of α = 0.001. Finally, the occupational variable with the statistical K-Square = 46.15 shows a significant difference at the level of α = 0.001.

DISCUSSION AND CONCLUSION

The present study has examined the relationship between the demographic variables associated with committing suicide, within the different seasons of 2011, and those suicide attempters who were hospitalized in Bandar Abass Shahid Mohammadi Hospital. The results showed that 65% of these suicidal persons were 14 to 24 years old. In other words,

adolescents and the youth made up the largest percentage of people who had attempted suicide. Furthermore, the statistical analysis indicated that there was a significant difference among the different age groups. Regarding the marital status it was also determined that 75.5% of the people who committed suicide were single. The statistical analysis showed that there was a significant difference in committing suicide between married and single people. Regarding the occupational status it was found that students and housewives had the highest frequencies, compared to other professional groups. In the current study, both students high school and college students were regarded to be in the age group of 'youth'. The statistical analysis showed a significant difference among these groups and other occupational groups. This indicated that the risk of suicide among adolescents and the youth is more than in any other age group. Also the results of the analyses of the demographic variables showed that those who were native-born of Hormozgan attempted suicide more than those who had migrated to this province. It was found that most of suicides were committed in the summer and 11.3% of these suicides had led to the person`s death and 88.7% of them were rescued. Nearly 83.8% of these people were among those who had attempted suicide for the first time. Furthermore, committing suicide by using drugs and poison had the highest frequency among people who were suicidal. According to the current study it was found that suffering from mental illnesses such as schizophrenia and psychiatric disorders were among the major factors associated with suicide. The findings of this study were consistent with those of Khawja *et al.*,[2] because in their study it was found that in Hormozgan, most of the suicides were committed during summer. The remarkable point of this research was the researcher's hypothesis that referred to the differing weather of this region. Although, in most studies the majority of suicides took place in the in spring, in this study we see the opposite was true in this region. Perhaps one of the most important reasons for the increase of suicide in this province in summer was the degree of heat and its very high humidity This is open to further research in this realm. Both of these studies showed that the most frequent age for suicidal behaviors was adolescence and youth.

As mentioned previously, this city possesses a particular status. It hosts people of a variety of cultural backgrounds living together. This fact sets the stage for incongruous social relationships, and can lead to isolationism, depression (especially among teenagers, youngsters, and housewives), and suicide prevalence, and the results of this study attest to this fact. Also the most common methods for committing suicide in both of these studies are using pills, poison, and hanging, respectively. Regarding the relationship between suicide and psychiatric disorders, the findings of this study are consistent with that of Solouph.[24] Based on some cognitive theories about suicidal psychiatric patients, it can be suggested that as these patients have difficulty in recalling their personal memories and do not have effective problem-solving ability, they are caught in a vicious circle of depression and difficulty in problem-solving, which ultimately makes them to commit suicide. As suicide is an act in which

Table 3: Descriptive characteristics of suicide methods, individual patient records		
Variables	**Descriptive indicators**	
	Frequency	**Percent**
Type of suicide		
Toxins	27	38.8
Drug	34	42.5
Hanging	8	10
Self-immolation	5	6.3
Jumping from a height	2	5.5
Drowning	4	5
History of mental illness		
Psychosis	63	78.8
Schizophrenia	10	12.5
Mood and anxiety	4	5
Consumption	3	3.8

Table 4: Results of the analysis of the factors affecting suicide			
Variables	**The value of the K-squared statistic**	**Degrees of freedom**	**Significant**
Season	19.40	3	0.005
Marital status	24.20	1	0.001
History of mental illness	124.70	3	0.001
Age	80.40	3	0.001
Education	66.50	4	0.001
Job	46.15	5	0.001

the person is aware of the possible results of the deliberate harm to himself, the cognitive abilities of the person have a direct role in achieving this goal. Generally, it can be stated that the cognitive factors involved in suicidal behavior include the person`s awareness of his action.[21] Kelly (1961) has interpreted suicide as an action aimed at validating one`s life or giving up everything. In this perspective, suicide is committed because of complete anxiety, depression or the person`s deterministic views about life: In these cases the Current events are so clear cut that the only possible way to get rid of these thoughts is to abandon that scene completely.[25] However, the findings of the current study are not consistent with the results of the research on suicide done by Rezaeian and Sharifi, because in their study they have shown that the suicide rates are the highest in the summer and then in winter. On the other hand the findings of the current study are consistent with the findings of a study conducted by Dastjerdi *et al.*, because in both of these studies it was found that most suicides occur in the summer. Generally, using the results of this study and other studies on suicide, it can be stated that multiple interrelated factors will make a person commit suicide. Suicide is such an event that any single casual explanation for its nature, will not display its nature correctly. Accordingly, in the scope of the present study, it is found that several demographic, social, and psychological variables influence the committing of suicide. In an overall view, we can say that these variables are social solidarity, social status, and religious beliefs. Unity, uniformity of culture, and having similar customs lead to congruousfamily and social relationships. On the other hand, they play an important role in forming the family basis and having a positive effect on the mental health of teenagers, young esters, and housewives, and are the most important preventive factors of suicide. Although we cannot ignore the role of the weather in Bandar Abbas, further research can be conducted on the irregular migration problem. Therefore, life skill training, increasing psychological and counseling services for the youth, and encouraging collective and team activities can be very effective in preventing suicide.

ACKNOWLEDGMENTS

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