

Relationship Between Suicide Ideation, Depression and Anxiety among Iranian College Students

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Abstract: The purpose of this study was to assess the level of depression, anxiety and suicide ideation among Iranian college students. Another aim of this study was to examine the relationship between depression and suicide ideation, anxiety and suicide ideation and to explore the relationship between depression and anxiety, in order to look whether there is significant correlation between these variables. A total number of 124 participants participated in this study this number consist of 62 male and 62 female. Participants were required to complete a demographic survey, Depression Anxiety Stress Scale (DASS 42) and Beck Scale for Suicide Ideation BSSI. The Farsi version of DASS 42 measures negative mood state of depression, anxiety and stress. Out of three mood states scores from their depression and anxiety were used. The Farsi version of BSSI measures the intensity of participant's suicide ideation. The results indicate that 46% of participants were within the normal range of depression 46%, it also revealed that 53.2% were within mild to extremely severe level of depression, 50.8% of the participants experienced normal level of anxiety whereas 49.2% of them experienced mild to extremely severe level of anxiety. Majority of participants reported having no suicide ideation whereas 29.8% were experiencing low levels, 13.7% high levels and 2.4% were at very high risk of suicide ideation. This study also found a significant correlation between depression and suicide ideation, anxiety and suicide ideation and anxiety and depression.

Key words: Depression, suicide, ideation, anxiety, high level

INTRODUCTION

At present, suicide is an important public health concern worldwide and it has become a leading cause of loss of life. According to World Health Organization, nearly one million people commit suicide every year and out of this one million, approximately 60% of world suicide takes place in the Asian countries (Shin *et al.*, 2013). Suicide is a very complicated process, whereby it makes a person to try different pathways from the beginning which is ideation, towards planning and finally, attempting. Besides, a study in the field of "psychological autopsy" indicated that most suicides usually happen with the individual's first attempt (Lee *et al.*, 2010). In fact, a research indicated that about 13% of suicide ideators attempt suicide almost within a year and the presence of suicide ideation significantly raise the chances of suicide attempt; as estimates showed that only in 2010, there were 8.7 million suicide ideators in the United States (Han *et al.*, 2014). Moreover, among college students, there are numerous risk factors but some of the most prominent factor is depression symptoms and depression.

Depression is one of the most common problems faced by college students (Ibrahim *et al.*, 2013). The need to free oneself from one's problems makes suicide a preferable solution. Suicide is not an accidental or a meaningless act but it is a way to free oneself from problems and issues that are creating and putting a person in a lot of psychological distress and pain (Spahbodi *et al.*, 2014). In the past years, the suicide rate increased significantly in Iran and in some provinces, the rate had been more compared to others. For instance, in province of Ilam, suicide rate increased from 2 persons per 100,000 in 1989 to 63 people in 100,000 in 1994 (Mihandoost, 2013). Studies also have illustrated that 43 percent of the attempts in Iran were made by those within the age range of 19-20 years and 52% among 20-39 years of age. Recent reports by Iranian News Agency ISNA in 2014 indicated a 14% increase on suicide rate, the total number death by suicide or suicide suspected attempts were 3125 people, not to forget that Iran is a Muslim country and the predominant religion is Islam. The suicide rates, compared to other countries are lower. However, as stated here and indicated in various researches, not only the rates are

increasing but many of the attempted suicides and suicide cases were and are underreported (Rezaeian, 2010). In an intergraded analysis of suicide in Iran, it has been revealed that the most common average age for committing suicide is 25 years old.

Besides, depression and anxiety related disorders such as social anxiety are amongst the most common causes of increased suicide risk (Mihandoost, 2013). Suicide attempted by adolescents and young adults places devastating social costs in terms of potential social life that has been lost to the victim and lots of psychological and emotional damages to families and communities. It also urges the social scientists to continue to deeply explore mental health problems. The first suicide attempt usually occurs after a year of the ideation onset in 60% of the cases. Thus, one in every 50-200 suicide attempts committed by youth has a fatal outcome that is in relation to their prior suicide attempts, originating from suicide ideation (Pillai *et al.*, 2009).

Besides, recent studies have indicated depressive symptoms to be highly associated with increased risk of suicide intent and ideation. Past research in Iran indicated that more than half (58.3%) of those who attempted suicide suffered from mood disorder while 66.9% suffered from depression. One way to describe the relationship between anxiety and suicide is to compare them with depression and its correlation with suicide, for instance, if suicide is a way for a depressed individual to escape, than suicide for an individual with anxiety disorder is a way to escape from anxiety, fear and worry as individuals with anxiety disorders ruminate on maladaptive beliefs for example, life can never get better or my family is better off than me. These beliefs can intensify hopelessness and increase the risk of suicide (Nepon *et al.*, 2010).

Not only as complete form of disorders but sub threshold depression and anxiety are known to increase the risk of suicide, about 40-50% of adolescents suffer from sub threshold anxiety and as it was also indicated that adolescents with sub threshold depression or anxiety had twice greater rate of suicide ideation (Balazs *et al.*, 2013). In addition, a study that continued for 35 years on some past patients, revealed that 20% of individuals who suffered from panic disorder commit suicide in comparison to 16.2% of individuals who were diagnosed with major depression (Bolton *et al.*, 2008). Depression, along with anxious symptoms, increases the risk of suicide and if anxious symptoms are accompanied with major depression, the risk of suicide will be substantial whereas risk of suicide in major depression without anxiety symptoms is lower (Goldberg and Fawcett, 2012).

The objective of this study was to examine if there is a significant relationship between suicide ideation and depression and suicide ideation and anxiety as well as to explore the relationship between depression and anxiety among Iranian college students. Suicide ideation significantly increases suicide attempts and suicidality which is indicated by extreme emotional distress. Depression and anxiety are the most common reasons for referral while depression and depressive symptoms are known to be one of the most common reasons for the rise in suicide ideation and attempts. It seems that anxiety could strongly correlate with suicide ideation, behavior and attempt independently. Besides, the combination of both symptoms and their correlation could be a strong predictor of increased risk for suicide attempt. Through this study the following two questions are answered:

- What are the students' level of depression, anxiety and suicide ideation
- Is there a relationship between depression and suicide ideation, anxiety and suicide ideation and depression and anxiety

In this study the following three statements are the main hypothesis of the research:

- H₁: there is a significant correlation between depression and suicide ideation
- H₂: there is a significant correlation between anxiety and suicide ideation
- H₃: there is a significant correlation between depression and anxiety

Suicide ideation can be defined by thoughts, images and believes in relation to a particular method of committing suicide, thus ending one's life (Ghahari, 2013). Depression might occur in different ways such as sadness, grief, disappointment and self-criticism, having too much expectation on oneself, or sometimes it is the perception about the inability to modify or change something that cannot be changed. The definition of anxiety underwent some changes and at present, the most common way to define anxiety is persistent symptoms of anxiety and tension emanating from worry and apprehension that are unrelated to other emotional disorders, for instance, worry about job performance and minor details of everyday life (Barlow, 2001).

In terms of prevalence, suicide ideations are far greater than suicide attempts. Suicide ideations are transient in nature, especially among adolescents. Nevertheless, some researches have indicated that those with lower intensity of suicide ideation during adolescent

could later develop into suicidal behaviors in adulthood and this has been viewed in clinical population that even mild suicide ideation will progress into lethal behaviors. Consequently, the majority of attempters begin with ideation development and later to self-harming acts whereas only 0.8% of attempters have been reported to have no suicide ideation (Sveticic and Leo, 2012). As suicide has become among the three main leading causes of death among youth from 10-24, suicide ideation is known to be as a precursor to suicide attempt and completed suicide. In fact, research indicates that by tracing suicide ideation during childhood and adolescence, it is possible to predict suicide ideation and attempt later in adulthood (Greene *et al.*, 2009). Among the risk factors of suicide ideation, depression is known to be an important correlation whether it is in the form of a disorder or as sub-threshold or as mood/state. Another risk factor is to be anxiety with lots of controversies and to somewhat conflicting evidence as some tend to believe anxiety disorders could be independently linked to suicide ideation whereas some other researchers rather emphasize on its indirect effect on suicide, suicide behavior and suicide ideation. The combination of depression and anxiety could have adverse effects on individuals and student population is no exception. According to research, one third of students suffer from both anxiety and depression whereas some tend to believe anxiety predates depression, concluding anxiety would later develop into depression and others have found that this relationship between these two could have different meaning as people with depression could later experience anxiety symptoms. However, there is consensus among researchers that the combination of anxiety and depression is not only more difficult to treat but a few researches have indicated that they will increase the risks of suicide substantially.

MATERIALS AND METHODS

A few studies have assessed the prevalence of suicide ideation, depression and anxiety using self-report instruments in Iran. The main objectives discussed in this section are description of the sample that was used in this research, explanation of the instruments used and to describe how the study was conducted. Statistical analysis is also discussed in this section. This study employed the random sampling technique from a sample of Iranian college students at Islam Azad University of Lahijan. One hundred and thirty were recruited from one university in Iran. All of the participants were college students; they were recruited by random sampling method. Out 135 participants 70 were male and 65

female. The 124 questionnaires were used for this research; there were 62 male participants and 62 female participants from the particular university. Participants' age range was between 18-33 years. The questionnaires used were in Farsi language. All questionnaires were filled by students' paper and pencil 8 questionnaires filled by female participants were not included because 5 of the female respondents did not completed the suicide ideation questionnaire and 3 of the scores were outliers. As for male participants 3 outliers were not included in the computation process. The depression, anxiety and stress scale, DASS is a self-report scale that measures three different negative emotional states which are depression, anxiety and stress that was devised by Lovibond and Lovibond. This scale consisted of 42 self-report items and each item was rated on 4-point Likert-type scale. The points ranged from "0-always false" to "3-always true". In order to report the level of agreement of respondents in 40 items, high level means strong agreement. The DASS 42-item questionnaire took about 20 minutes to complete (Akin and Cetin, 2007). It incorporated three scales for the measure of depression, anxiety and stress. On the other hand, suicide ideation was measured by using the Beck Scale for Suicide Ideation/Beck. The Beck Suicide Ideation is widely used by clinicians and researchers. Its task is to assess and evaluate the intensity of person's attitude, behavior and plans to commit suicide. Beck Suicide Ideation scale consisted of 19 items. Each item consists of three alternative statements graded in intensity from 0-2 (Chioqueta and Stiles, 2006).

The participants were recruited via random sampling method during the period of January to February 2015, at Islamic Azad University of Lahijan branch. First, the researcher was directed to Islamic Azad University research center. Upon presenting the consent to the research center), the researcher was asked to gain approval from the head of clinical psychology department, with the consent letter, along with participant informed consent form, demographic form, depression Anxiety Stress Scale 42 and Beck Suicide Ideation Scale was presented to the head of clinical psychology department of Islamic Azad University branch in Lahijan. After checking the information, the researcher was asked to join a meeting with the head of clinical psychology department, director of research center and the representative of intelligence ministry of Islamic Republic of Iran at Islamic Azad University Lahijan branch. Some items from the demographic form were asked to be removed due to security and religious reasons. Initial attempt was rejected for data collection, so the researcher had to reassure the head of research center and

representative of intelligence ministry of Islamic Republic of Iran at the university due to the sensitivity of the topic because according to Islamic laws, suicide is equivalent to committing a crime and to talk about suicide is a taboo. Hence, a new set of information about the centers providing mental health care services were included in the debriefing form as 3 centers were included that were within close vicinity and more accessible. One of the centers provided phone counselling for mental health crisis intervention matters such as suicide cases. The surveys were held in class, a letter was presented to the participants to inform them on the procedure as the participants were asked to fill in the questionnaire. The questionnaire consisted of demographic collection form, DASS 42 by lovibod and lovibond and beck suicide ideation scale developed by beck and steer. The duration for filling in the questionnaire was approximately, 25-30 minutes. The SPSS was used in this research in order to analyze the data. The scores gathered from the questionnaires were tabulated. Besides, this study used correlation analysis in order to identify the significant relationship between depression and suicide ideation, between anxiety and suicide ideation and between depression and anxiety. Normality test was used to determine if the data set was well-modelled via normal distribution. Since, the data were not normally distributed, Spearman rho's correlation coefficient was employed to measure how they were correlated.

Validity and reliability: The validity and reliability of DASS was tested in Iran with a sample size of n = 400 students and the scale was translated into Farsi language. DASS scale was used along with beck depression inventory; zung anxiety scale and student stress scale while the research indicated that the correlation coefficient between DASS depression scale and beck depression inventory was 0.84.9. It also indicated that the correlation coefficient between DASS anxiety scale and zung anxiety scale was 0.83.1 while the correlation coefficient between student stress scale and DASS stress scale was reported to be 0.74.7. The findings of research among Iranian population showed the validity of internal consistency of Cronbach $\alpha = 0.94$ for depression, 0.85 for anxiety and 0.87 for stress scale which had been consistent and corresponded with the Cronbach alpha of the original test developed (Balazs *et al.*, 2013; Bolton *et al.*, 2008; Ghahari, 2013).

RESULTS AND DISCUSSION

In this study, a brief summary of details of the participants will be discussed, details such as number of participants, age range and their gender. The results

Table 1: Summary of descriptive statistics

Variables	N	Range	Min.	Max.	Mean	SD	Skewness
Depression	124	42	0	42	12.427	9.4087	0.9150
Anxiety	124	31	0	31	9.790	7.2519	2.9040
Suicide ideation	124	33	0	33	2.613	5.0730	7.2519

Table 2: Frequency of depression scores

Depression	Frequency	Percent
Normal (0-9)	58	46.8
Mild (10-13)	21	16.9
Moderate (14-20)	21	16.9
Severe (21-27)	14	11.3
Extremely severe 28+	10	8.1
	163	100.0

Table 3: Frequency of anxiety scores

Anxiety	Frequency	Percent
Normal (0-7)	63	50.8
Mild (8-9)	15	12.1
Moderate(10-14)	17	13.7
Severe (15-19)	16	12.9
Extremely severe 20+	13	10.5
	163	100

indicate that the overall depression mean score of the participants was 12.427 with a standard deviation of 9.40. The overall mean score of participants for anxiety was 9.790 with a standard deviation of 7.25. The overall mean score of participant for suicide ideation 2.613 with a standard deviation 5.07. The minimum score obtain by participants for depression scale was 0 and the maximum score obtained by participants was 42. The minimum score obtained by participant for anxiety scale was 0 and the maximum was 31. The minimum score obtained by participants for suicide ideation scale was 0 and the maximum score obtained by participants in this scale was 33. The summary of descriptive statistics is presented in Table 1.

Level of depression, anxiety and suicide ideation: For depression and Anxiety scores for each participant were categorized into normal, mild, moderate, severe and extremely severe. For depression participants with a score of 0 to 9 are classified as having normal levels of depression, from 10-13 are mild level of depression, from 14-20 moderate, 21-27 severe and 28 and above are classified as extremely severe level of depression (Table 2).

For anxiety participant with a score 0-7 are classified as having normal levels of anxiety, participants obtaining either 8 or 9 scores are classified as experiencing mild level of anxiety, scores ranging from 15-19 are classified as severe and scores 20 and above are classified as extremely severe level of anxiety. The frequency of level of anxiety is exhibited in Table 3.

The majority of the participants who were involved in this study were within age group of 18-21; the total number of 68 participants was within this age range, the

Table 4: Summary of descriptive statistics by age range for level of depression

Age range	N = 124	Range	Min.	Max.	Mean	SD	Skewness
18-21	68	41	1	42	13.515	9.47	0.826
22-25	23	29	0	29	8.217	7.64	1.539
26-29	13	30	3	33	11.231	9.78	1.179
30-33	20	37	2	39	13.515	9.90	1.370

Table 5: Summary of descriptive statistics by age range for level of anxiety

Age range	N = 124	Range	Min.	Max.	Mean	SD	Skewness
18-21	68	30	0	30	10.412	7.55	0.994
22-25	23	16	1	17	6.348	4.30	1.055
26-29	13	31	2	33	11.231	9.23	1.179
30-33	20	19	2	31	10.700	6.75	1.443

second groups with highest number of participants belonged to age range of 22-25, in total 23 respondents were within this age range. The third group with large number of participants was within the age range of 30-33, the sum of participant in this group is 23 and the fourth group with lowest number of participants compared to the other three groups with 13 participants were those within the age range of 26-29.

The mean score of depression for the participants within the age range of 18-21 is 13.515 with the standard deviation of 9.47, the minimum score obtained within this age group was 1 and the maximum score obtained was 42, this also means that participants within this age range are experiencing mild level of depression. The mean score for the second largest group of participants who were within the age range of 22-25 is 8.217 with the standard deviation of 7.64, the minimum score obtained within this age group was 0 and the maximum score was 29, this means that participants within this age group are experiencing normal level of depression. The mean score for the third largest group of participants who are within the age group of 30-33 was 11.950 with the standard deviation of 9.90, the minimum score obtained was 2 and the maximum score obtained for this age group was 29, this also means participants within this age range are also experiencing mild level of depression. The mean score for the fourth group those within the age range of 26-29 and the smallest group compared to other groups was 14.923 with the standard deviation of 9.78, the minimum and maximum scores obtained by this group of participants are 3 and 33, this also means that this group of participants are experiencing moderate level depression. Table 4 shows summary of descriptive statistics by age range for level of depression.

The mean score of anxiety for the participants within the age range of 18-21 is 10.412 with the standard deviation of 7.55, the minimum score obtained for this age group was 0 and the maximum score obtained was 30, this also means that participants within this age range are experiencing mild level of anxiety. Table 5 shows summary of descriptive statistics by age range for level of anxiety.

Table 6: Frequency of suicide ideation scores

Suicide Ideation	Frequency	Percent
No Risk 0	67	54.0
Low Risk (1-5)	37	29.8
High Risk (6-19)	17	13.7
Very High risk (20-38)	3	2.4
	163	100.0

Table 7: Summary of descriptive statistics by age range for level of Suicide ideation

Age range	N = 124	Range	Min.	Max.	Mean	SD	Skewness
18-21	68	21	0	21	3.294	5.08	1.715
22-25	23	6	0	6	0.522	1.41	3.201
26-29	13	31	0	31	2.3292	8.39	0.616
30-33	20	20	0	20	1.950	4.48	0.512

Table 8: Results of Spearman rho's test

Spearman's rho	Depression	Anxiety	Suicide ideation
Depression			
Correlation Coefficient	1.000	0.733**	0.609**
Sig. (2-tailed)	.	0.000	0.000
N	124.000	124.000	124.000
Anxiety			
Correlation Coefficient	0.733**	1.000	0.598**
Sig. (2-tailed)	0.000	.	0.000
N	124.000	124.000	124.000
Suicide ideation			
Correlation Coefficient	0.609**	0.598**	1.000
Sig. (2-tailed)	0.000	0.000	.
N	124.000	124.000	124.000

** Correlation is significant at the 0.01 level (2-tailed)

Participant's level of suicide intention was measured by scale for suicide ideation (BSSI) developed by Beck and Steer. This questionnaire consists of 19 items; each item has 3 statements that measure; if one is actively intending to commit suicide has clear plans to commit suicide or whether the intentions are passive. First five questions measure the respondent's attitude toward living and dying, if all five statements are answered then the respondent is requested to proceed with next 14 items, but if the fifth question is graded 0 then the participant is not required to proceed with the next 14 items. The frequency of level of suicide ideation is presented in Table 6. Table 7 shows summary of descriptive statistics by age range for level of suicide ideation.

Inferential analysis: To explore the relationship between variables, the correlation analysis was run. Spearman rho's correlation coefficient was conducted in order to explore the relationship between depression and suicide ideation, anxiety and suicide ideation and to explore the relationship between anxiety and depression. The results are presented in Table 8 results of Spearman rho's test.

Most correlation analysis expresses the power of the link or "co-occurrence" among variables, between the two figures (-1 and +1), the value is called correlation

coefficient, so a when there is positive correlation this means that a positive relationship is there, a negative correlation coefficient means there is a negative relationship whereas a 0 correlation coefficient indicates no relationship. So, the closer the rs value to +1, it means the stronger the correlation between variables, besides in order to have statistically significant relationship the Sig. (2-tailed) value should be <0.05 .

Therefore as indicated in Table 8, there is significant relationship between two variables of depression and anxiety and this relationship is strong and positive ($r = 0.609$), the Sig. (2-tailed) value is 0.000 ($p < 0.05$) which means the relationship between depression and suicide ideation are strong, positive and statistically significant. Consequently, according to the findings of this study the first hypothesis:

- H_1 : there is significant correlation between depression and suicide ideation is supported

The finding also indicates that the relation between anxiety and suicide ideation are significant, this relationship is moderately positive ($r = 0.589$), the Sig. (2-tailed) value is for these variables are 0.000 ($p < 0.05$) which means that the relationship between anxiety and suicide ideation is statistically significant, therefore it can stated that there is a significant relationship between anxiety and suicide ideation. Based on the findings it can be stated that the second hypothesis:

- H_2 : there is a significant correlation between anxiety and suicide ideation is also supported

The findings also reveals a significant relationship between depression and anxiety, the relationship between these variables are positive and strong as ($r = 0.733$), the Sig. (2-tailed) value for these variables is 0.000 ($p < 0.05$). This means that the relationship between depression and anxiety is statistically significant, thus we are able to conclude that there is significant relationship between depression and anxiety and state based on findings of this study the third hypothesis is also supported:

- H_3 : there is a significant correlation between depression and anxiety

CONCLUSION

The aim and the goal of this research is to know about the levels of depression, anxiety and suicide ideation among Iranian college students, besides this research examined the relationship between depression and suicide ideation, anxiety and suicide ideation and explores the relationship between depression and anxiety. The result indicates the level of depression, anxiety and

suicide ideation among Iranian college students, this will be further discussed in the summary of data analysis.

This study, also showed that there is significant correlation between the variables like there is positive strong correlation between depression and suicide ideation, there is a positive and moderate correlation between anxiety and suicide ideation and there is positive and strong correlation between depression and anxiety. Since, it was showed that correlation between the variables are significant and positive, accordingly all the three hypotheses were supported. The overall results indicate that slightly above half (54%) of the participant are having no suicide ideation risks but the rest of the participants the other half were experiencing low to very high risk of suicide ideation, out of the rest of participants experiencing low to very high risk of suicide ideation, 16.1% of the participants were from high to very high risk of suicide ideation and planning, among them participants within the age range of 18-21 were having low risk of suicide ideation. Those within age range of 22-25 were having no risk of suicide ideation. Participants within the age range of 30-33 were having low risk of suicide ideation and those within the age range 26-29 were experiencing low level of suicide ideation. The evidence indicate that high prevalence of depression, anxiety and suicide ideation even in context such as Iran is significantly high, meaning there are potentials that these issues could develop into more serious matters. Therefore, more active suicide awareness and promotion of counselling services are required in Iranian university, because there is substantial evidence that indicate early intervention can protect individual conditions to be worsened and/or prevent a person to commit suicide in near or far future based on the intensity of suicide ideation and intent.

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