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The Relationship between Emotional Intelligence and Stress, Anxiety, and Depression among Iranian Students

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Abstract

Background: Entering a new environment such as university would expose students to many psychological tensions. Among students, those with higher emotional intelligence can manage their stress better in critical situations. The purpose of this study was to investigate the relationship between emotional intelligence and levels of stress, anxiety, and depression among students.

Methods: This study was a cross-sectional one and the population included all students of Shahroud university of medical sciences. The participants were 403 students who were selected through multi-stage random sampling. Shiring emotional intelligence questionnaire and depression, anxiety, and stress scale (DASS-21) were used to collect data. Independent t-test, chi-square, and pearson correlation coefficient and also SPSS software were used to analyze the data.

Results: The results indicated that 82.2% of the participants (n = 331) had high emotional intelligence and 17.9% (n = 72) had moderate emotional intelligence. The mean score of emotional intelligence was 113.5 among the participants, and levels of stress, anxiety, and depression were significantly different between two groups of students with high and medium emotional intelligence. Correlation of emotional intelligence score with stress score (r = -0.59), anxiety score (r = -0.57) and depression score (r = -0.65) indicated a reverse and significant relationship between emotional intelligence with stress, anxiety, and depression.

Conclusions: According to the relationship observed between emotional intelligence and management of psychological tensions in students, it is suggested that authorities should take the necessary steps to improve students' emotional intelligence.

Keywords: Anxiety, Depression, Emotional intelligence, Stress, Students.

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Introduction

Entering a new environment called university, sudden separation from family, academic pressure, conflicts with other students in the dormitory or residence halls, shortage of amenities, difficult economic situation and the like can impose huge psychological pressure on students and make them stressed out. This can consequently lead to the degradation of educational quality and decay of higher education investments.[1] Moreover, the persistence of environmental stress can bring about physical and psychological disorders such as cardiovascular symptoms, gastrointestinal disorders, insomnia, headache, lymphadenopathy, over-perspiration, apprehension, and depression.[2] Depression is a disorder that has concomitants such as lower energy and interest, qualm and feeling of guilt, distraction, appetite loss, and suicidal thoughts, and emerges with changes in activity levels, cognitive ability, speaking, sleeping and other biological rhythms.[3] Despite technological advances in today's world, disorders such as stress, anxiety, and depression are known as common diseases of the century,[4] and according to a WHO report in February 2017, more than 300 million people worldwide suffered from a common mental disorder called depression.[5] In addition to common tensions, medical students, due to their connection with health care environments, emergency casualty departments and dealing with patients, are exposed to more psychological problems.[6]

People with higher levels of emotional intelligence have greater happiness, liveliness, and autonomy in their activities and have better performance. They are also more optimistic about life and more resistant to stress. People who are not capable to understand, express and regulate their emotions cannot manage well in stressful situations, perceive the stress more intensely, have less psychological adjustment, and experience more pain.[7] Goleman defines emotional intelligence as a talent, skill, or ability that profoundly affects all abilities of the individual to perceive, regulate and manage of emotions, use emotions and find a cause for emotions in thoughts.[8] According to Salovey, Mayer, Caruso, and Yoo emotional ability is one of the determinants of psychosocial adjustment and, therefore emotional disorders, in turn, play a decisive role in the formation of psychiatric disorders and interpersonal problems.[9] Hein also believes that all babies are born with inherent emotional potential and based on what happens in life, this emotional potential can flourish or diminish.[10] Emotional intelligence is not genetically determined and as people grow in age, they become more emotionally and socially intelligent.[11] Bee and colleagues also maintain that as the age and experience grow, emotional intelligence also increases.[12] This type of intelligence, however, is a flexible skill which is easily learned and enhanced.[13] Sandra J. LIoy in her study that each found for every 1-point increase in emotional intelligence, the risk of depression decreased by 6%.[14] Some studies have also shown that emotional intelligence is significantly negatively correlated with depression, anxiety, and stress.[15-21] Some studies, however, found no significant relationship between emotional intelligence and stress level.[22] In line with the existing research, the purpose of this study was to investigate the relationship between emotional intelligence, with level of stress, anxiety, and depression among the students of Shahroud university of medical sciences.

Materials and Methods

In this cross-sectional study, 403 students of Shahroud university of medical sciences were selected through multistage random sampling in 2018. Based on the total size of the student population of the university (n = 1,600), and in proportion with

the population of each faculty, 25% of the students were randomly selected as clusters. The purpose of the study was explained to the participants and they were assured of the confidentiality of the information they provided. Then, obtaining the consent of the students, the questionnaires were administered to the participants. The study protocol was reviewed by the Ethics Council of Shahroud university of medical sciences and approved with the code of IR.SHMU.REC.1396.82.

The data collection instruments in this study included Siberia Schering's emotional intelligence questionnaire and depression, anxiety and stress scale (DASS-21). The Siberia Schering questionnaire has 33 items which form the five components of emotional intelligence including self-awareness self-control, self-arousal, sympathy (identifying others' emotions and empathy), and social skills (regulating one's relationship with others). The scores on the questionnaire can range from the maximum 165 to the minimum 33. A score between 33 and 66 indicates a low level of emotional intelligence; a score between 66 and 100 indicates a moderate level of emotional intelligence and a score higher than 100, indicates a high level of emotional intelligence is high.[23]

The Persian version of Shering's emotional intelligence questionnaire was validated by Mansouri[24] in Iran with a group of graduate students of Allameh Tabatabai university, and Cronbach's alpha coefficient of the internal consistency of this scale was reported 0.85. DASS21 questionnaire consists of 21 items which categories test-takers based on the three characteristics of depression, stress and anxiety into five categories of normal, mild, moderate, severe and very severe. Lovebound et al. developed this questionnaire[25] and Fathi Ashtiani translated it into Persian. Anthony et al.[26] examined the validity and reliability of the scale and reported a Cronbach's alpha internal consistency coefficients of depression, anxiety and stress questions as 0.97, 0.92 and 0.95, respectively. The Cronbach's alpha internal consistency coefficients of the Persian version of this questionnaire as reported by Moradi Panah[27] were 0.94 for depression, 0.92 for anxiety and 0.89 for stress. Demographic variables such as sex, age, marital status and residency (native or non-native) were assessed.

The collected data were entered into SPSS and quantitative data were presented as mean (standard deviation) and qualitative data were presented as frequency and percentage. The relationship between the variables was evaluated using an independent t-test, chi-square, and pearson correlation coefficient. Significance level in this study was set at 0.05.

Results

The participants in this study were 403 medical students with the mean age of 21.4 years and the standard deviation of 3.9 years. The sample

included 39.7% (n = 160) male students and 60.3% (n = 243) female ones. Table 1 displays the demographic characteristics of the students.

Examination of students' emotional intelligence showed that 82.2% (n = 331) had high levels and 17.9% (n = 72) had moderate levels of emotional intelligence. The coefficient of change in each component of emotional intelligence was 14% in self-awareness, 14% in self-carousal, 15% in sympathy, 18%

in social skills, and 19% in self-control. The mean score of emotional intelligence among all students was 113.5 ± 14.02, and no significant difference between emotional intelligence score males and females (Pvalue = 0.67). Moreover, there was no significant difference in the distribution of emotional intelligence between the two genders (Pvalue = 0.49), where 83.8% of boys and 81.1% of girls had high levels of emotional intelligence. Compared to single people (f = 80.6%), significantly more married people (f = 92.3%) had high levels of emotional intelligence (χ^2 = 4.2, Pvalue = 0.04).

As the results indicate, the two groups of high and moderate levels of intelligence had significantly different levels of stress, anxiety, and depression. Table 2 shows the distribution of stress, anxiety and depression levels by students' emotional intelligence status. Furthermore, the correlation coefficients between emotional intelligence score and stress score (r = -0.59), anxiety score (r = -0.57) and depression score (r = -0.65) shows a significant and negative relationship of emotional intelligence with stress, anxiety, and depression. The analysis of stress, anxiety, and depression mean scores based on the percentiles of emotional intelligence score (figure 1) showed that the higher the percentile of emotional intelligence score, there the lower the stress, anxiety, and depression mean scores.
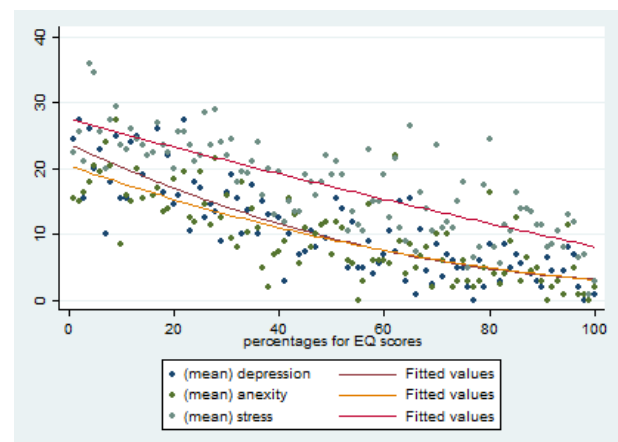

Figure1. Distribution of depression, anexity and stress scores in terms of EQ scores percentiles

The mean scores of stress, anxiety, and depression from the maximum score of 42 among all students were 17.3 ± 10.2, 9.9 ± 9.3 and 10.9 ± 9.5, respectively, which is displayed by gender in table 1. In this study, the mean levels of stress, anxiety, and depression among male and female students did not show a significant difference. This difference was not significant among single and married either. The results of stress scores showed that 14.3% of students had mild stress, 21.5% had moderate stress, 15.1% suffered from severe stress and 7.6% of students suffered from very severe stress. Ass for the level of anxiety, 13.9% of students had mild anxiety, 15.1% had moderate anxiety, 9.4% suffered from severe anxiety and 17.8% suffered from severe anxiety. Moreover, 11.9% of the students had mild depression, 14.8% had moderate, 10.1% had severe and 7.6% had very severe depression. The results in table 2 show that the levels of stress, anxiety, and depression are significantly different between the two groups of students with high and moderate emotional intelligence scores.

Table 1. Comparison of age, marital status, and scores of emotional intelligence, stress, anxiety and depression by gender

Variable	Male (n = 160)		Female (n = 243)		Pvalue
	Mean ± SD	F(%)	Mean ± SD	F(%)	
Age	21.4 ± 4.3	--	21.4 ± 3.6	--	0.7
Marital status					
−Single	--	147 (91.9)	--	204 (84.0)	0.02
−Married	--	13 (8.1)	--	39 (16.0)	
Residency (nonnative)	--	111 (69.4)	--	160 (65.8)	0.46
Emotional Intelligence	113.9 ± 14.3		113.3 ± 13.8		0.67
−Self-awareness	30.5 ± 4.2		30.4 ± 4.3		0.84
−Self-arousal	23.0 ± 3.3		23.2 ± 3.2		0.66
−Self-control	22.6 ± 4.0		22.0 ± 4.3		0.15
−Sympathy	21.0 ± 3.4		21.1 ± 2.9		0.72
−Social skills	16.5 ± 3.1		16.4 ± 2.8		0.60
Stress	16.6 ± 9.8		17.3 ± 10.2		0.43
Anxiety	9.6 ± 8.5		10.2 ± 9.8		0.36
Depression	11.0 ± 8.8		10.4 ± 9.9		0.13

Table 2. Comparison of stress, anxiety and depression by emotional intelligence status

Variable	Moderate emotional intelligence (%) n = 72	High emotional intelligence (%) n = 331	Total (%) (n = 403)	Pvalue
Stress				
−No	7 (9.7)	159 (48.1)	166 (41.2)	
−Mild	8 (11.1)	50 (15.2)	58 (14.4)	
−Moderate	22 (30.6)	65 (19.6)	87 (21.6)	0.0001
−Severe	18 (25.0)	43 (12.9)	61 (15.1)	
−Very severe	17 (23.6)	14 (4.2)	31 (7.7)	
Anxiety				
−No	8 (11.1)	168 (50.7)	176 (43.6)	
−Mild	4 (5.5)	52 (15.7)	56 (13.9)	
−Moderate	16 (22.2)	45 (13.6)	61 (15.1)	0.0001
−Severe	13 (18.0)	25 (7.5)	38 (9.4)	
−Very severe	31 (43.0)	41 (12.3)	72 (17.8)	
Depression				
−No	10 (13.9)	213 (64.4)	223 (55.3)	
−Mild	5 (6.9)	43 (13.0)	48 (11.9)	
−Moderate	19 (26.4)	41 (12.4)	60 (14.9)	0.0001
−Severe	21 (29.2)	20 (6.0)	41 (10.2)	
−Very severe	17 (23.6)	14 (4.2)	31 (7.7)	

Discussion

The results of this study showed that students with higher levels of emotional intelligence had less stress, anxiety, and depression levels, a finding which is consistent with results of studies conducted in Iran and other countries.[15–21] Such results came from research conducted in different regions and focused on different groups of people such as pilots, students, patients. The fact that the conclusion of such research was the same can indicate that in most cases high levels of emotional intelligence can secure people from psychological tensions. However, the results of the present study were not consistent with the findings of a study by Miri and colleagues on the relationship between emotional intelligence and scores of educational stress among medical students, although they also reported the significant relationship of some aspects of stress with emotional intelligence among the students. Despite the discrepancies of the overall results of that study with the results of the present study, Miri and colleagues, taking into account the relationship observed between different aspects of stress including personal interests, reaction to stressors, and performance in stressful situations with emotional intelligence, emphasized the relationship between stress and emotional intelligence.[22]

In the present study, 82% of students had high emotional intelligence which was not consistent with the results of Namazi and colleagues'[28] study with 180 midwifery students in Shahid Beheshti university, in which the mean score of emotional intelligence among all students was moderate (50.14 ± 53.29). The reason for the discrepancy between the results of the two studies can be differences in sample sizes, target groups (male and female) and the distribution of fields of study. Moreover, it can be claimed that in a large city such as Tehran, where Namazi and colleagues study was conducted, it seems a little difficult to establish a relationship with others, and control and even express emotions, and the low level of emotional intelligence among midwifery students of Shahid Beheshti university can be attributed to such factors. Rezanezhad and colleagues,[15] also using EQI questionnaire studied the emotional intelligence of 300 students of Yasuj university of medical sciences, and like the present study reported all students had moderate to high levels of emotional intelligence but due to differences in measurement scales used in the two studies, the mean scores of emotional intelligence in the two studied cannot be compared before standardization of the scores. However, Molai and colleagues[29] used Schering's scale to study the emotional intelligence of 180 students of Golestan university of medical sciences. The mean score of students' emotional intelligence was 22.10 ± 12.57, which is

consistent with the findings of the present study. In another study, Behzadi and his colleagues[30] used Schutte's emotional intelligence scale to study 72 medical students in Ahvaz university and reported a mean score of 115.83 out of the maximum score of 165, which is consistent with the results of our study.

Comparison of the coefficient of changes in the components of emotional intelligence indicates that the highest scores belong to students' self-awareness and self-arousal. Self-awareness is the identification of one's emotions, feelings, needs and weaknesses and strengths, and self-arousal is motivating oneself to achieve goals. The lowest score belongs to students' self-control, which is as Goleman maintains the ability to adjust one's emotions and use emotions and guide them appropriately to achieve goals, and this ability relies on self-awareness ability. He believes self-control can be acquired.[31] The results show that students had low scores on this feature.

This study, with sufficient sample size, was conducted for the first time in Shahroud university of medical sciences among all students. Accuracy in measurement along with the researcher's explanation and follow-up resulted in a response rate of 96% in this study. One limitation of this study was its cross-sectional design. Since life conditions and the emotional response of individuals to these conditions at different stages of life can lead to different levels of stress, changes in stress levels can vary over time. Another limitation of the study was length of the questionnaires which sometimes exhausted the students so that they did not answer all the questions carefully.

Since emotional intelligence is improvable, planners, in addition to taking academic and subject area issues of the students into account, should pay more attention to this important aspect of intelligence because mental disorders can have irreparable effects on students' educational and personality dimensions. Noticing the relationship between emotional intelligence and psychological tensions including stress, anxiety, and depression, it is recommended to promote emotional intelligence through educational activities.

Acknowledgement

Conflict of Interest

The authors declare that they have no conflict of interest.

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