

## The Effect of Teaching Emotional Intelligence Components on Exam Anxiety of Medical Sciences and Non-Medical Sciences Students of Tehran Islamic Azad University of Medical Sciences, Tehran, Iran

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### Abstract

**Background:** Emotional intelligence (EI) is one of the most effective factors in reducing exam anxiety and can be learned through education and can increase success. This study generally aimed to determine the effect of teaching emotional intelligence components on exam anxiety of medical sciences and non-medical sciences students of Tehran Islamic Azad University of Medical Sciences in 2017-18 academic year.

**Materials and Methods:** For this purpose, the quasi-experimental research method of pre-test-post-test type was used that 179 people were selected by quota method from medical sciences and non-medical sciences students of Islamic Azad University of Tehran, Iran, and were divided into experimental and control groups. Sarason Test Anxiety Questionnaire (TAQ) was used to collect the required data. After completing 8 training sessions on emotional intelligence components, a post-test were taken from two groups. The data obtained from the study were analyzed by descriptive statistical methods and appropriate inferential tests.

**Results:** The results showed that the mean reduction of test anxiety in the experimental group in medical sciences and non-medical sciences students was significantly different from the control group ( $P < 0.05$ ).

**Conclusion:** According to the results of the present study, teaching emotional intelligence components in groups can be used for students, especially students with high test anxiety. Also, software and educational books in this regard should be prepared and made available to students.

**Key Words:** Emotional Intelligence, Anxiety, Medical Sciences Students, Non-Medical Sciences.

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## 1- INTRODUCTION

One of the most extensive areas of research in recent decades is anxiety and its related factors. Anxiety is a mood-dependent phenomenon that often occurs without a stimulus and affects behavior and emotion. Anxiety sometimes occurs mildly and naturally and usually increases the motivation to do activities, sometimes it occurs severely and affects the whole life of the person (1). Exam anxiety means a kind of mental occupation identified with self-underestimation and doubt in capabilities that leads to lack of concentration and unpleasant physical reaction, and the result is a decrease in the ability to cope with the exam situation (2). Many university students suffer from exam anxiety. This anxiety is so severe that it causes problems for many students and can have negative effects on the academic abilities of those who suffer from it (3).

One of the concerns and worries of the educational system is the issue of students' anxiety. Most students have good grades during the semester but drop in grades at the semester exam, which may be due to their high level of anxiety. Low levels of stress during the exams are necessary for the study, but sometimes students' anxiety is so great that it limits their activities (4). Emotional intelligence is a set of non-cognitive capacities, capabilities, and skills that increase a person's ability to successfully cope with environmental requirements and stresses and lead to adaptive and humane behaviors on the part of the individual (2). Today, EI has been considered as the latest development in understanding the relationship between thinking and emotion in various fields of psychology. So far, a lot of research has been done on emotional intelligence, which indicates the role of emotional intelligence and its components in various aspects of people's lives such as academic achievement, education, jobs, marriage, personal development and social

relationships (5). In a quasi-experimental study conducted by Mahnaz Bahadori et al., on the effect of emotional intelligence training on anxiety, self-efficacy and academic achievement of high school students in Ahvaz, the results showed that EI training reduced test anxiety and increased self-efficacy and academic achievement of the experimental group compared to the control group (6). Karshki et al., conducted a study entitled "comparison of the effectiveness of emotional intelligence training and learning strategies in reducing students' test anxiety" and the results of their study showed that the scores of the two groups of control and emotional intelligence are not statistically significant, but the scores of skills training of learning skill group are significantly different from the control group and the emotional intelligence training group (7). Therefore, it can be said that teaching study strategies plays an important role in reducing test anxiety.

Castillo et al., conducted a quasi-experimental study to explore the interventional effects of two years of emotional intelligence training on adolescent aggression. In this study, 590 adolescents from eight Spanish national schools participated voluntarily in this study. Emotional intelligence skills training showed lower levels of aggression, anger, hostility, personal anxiety, obsession, both verbally and physically compared to the control group (8). Due to the high prevalence of exam anxiety at the school level and disrupting the achievement of educational goals and creating various educational problems, spending time with students and professors, creating a negative impact on self-esteem, motivation, success, efficiency and academic performance and according to the importance of teaching emotional intelligence components on the individual's ability to recognize, understand, manage and control emotions

such as test anxiety and students' lack of familiarity with this topic, the researcher decided to make a comparative study of the effect of emotional intelligence components training on test anxiety in giving knowledge and awareness to young students in medical sciences and non-medical sciences departments in order to use appropriate methods to reduce test anxiety.

## 2- MATERIALS AND METHODS

### 2-1. Study design and population

This is a quasi-experimental study. Due to the multiplicity of disciplines in Tehran Medical University (Islamic Azad University of Tehran, Iran), the researchers emphasized on creating equal conditions among different disciplines, based on which the quota sampling method was used. In this way, first the number of people from each field who had to participate in the study was determined by quota method, then among the students of that field, people were randomly selected to participate in the research. Using the sample size calculation formula:

$$n = (Z_{1-\alpha/2} + Z_{1-\beta})^2 (\delta_1^2 + \delta_2^2) / (\mu_1 - \mu_2)^2$$

With 95% confidence interval and 80% test power,

$$\delta_1 = 4, \delta_2 = 4.5, (\mu_1 - \mu_2)^2 = 3.24$$

$$(Z_{1-\alpha/2} + Z_{1-\beta})^2 = 7.85$$

The sample size is calculated 88 people for each of the control and experimental groups and a total of 176 people were selected. To be sure, a total of 179 out of 11,000 students were included in the study in proportion to the number of students in each field. Then the subjects were randomly divided into two groups of test and control and each group was pre-tested. Then one group was affected by teaching emotional intelligence-based strategies for 2 months (8 sessions), and the other group was not trained. Post-test was performed

again in both groups and the pre-test and post-test scores of the two groups were compared.

### 2-2. Measuring tools

Data were collected using Sarason Test Anxiety Questionnaire (TAQ), and a designed demographic questionnaire. The Sarason Test Anxiety Questionnaire was developed by Sarason in 1953 and has 37 items that must be answered "yes and no" in 10 to 15 minutes (9). Due to the appropriate psychometric properties and the existence of standard cut scores for this questionnaire, its use in measuring test anxiety is very common. Sarason reported a retest reliability coefficient of the test anxiety questionnaire of 0.80 (10), and in the Salovey study a retest reliability coefficient for the test anxiety scale was reported 87% (11). Cheraghian et al. (2008) reported a reliability coefficient of test interval of 0.88, internal consistency of 0.95 and standard validity of 0.72 (12).

### 2-3. Ethical consideration

It was not necessary to write the name and surname. Information was generally extracted. Participation in the study was optional and the distribution of the questionnaire was done in coordination with the faculty officials.

### 2-4. Data Analyses

In order to describe the data, descriptive statistics indicators (frequency, mean, standard deviation, graphs) were used. In addition, Kolmogorov-Smirnov statistical test was used to determine the normal distribution of data. The Multivariate analysis of variance (MANOVA) test was used due to the normal distribution of data, and SPSS software version 16.0 was used to analyze the data. P-value less than 0.05 were statistically significant.

## 3- RESULTS

According to the results of this study, the majority of participants were female

(72%), single (85%), among non-medical sciences disciplines, the highest frequency belonged to the field of microbiology (20.1%) and among the medical sciences group, the highest frequency belonged to the midwifery (11.7%). 77.4% were interested in their field of study and 90% were interested in continuing their education. About half of the fathers of the participants in the study were employees (47.48%), 41.34% were self-employed and 3.91% were unemployed. Diploma education with 37.43% had the highest frequency among fathers' degrees. 58.9% of mothers were housewives, 88% of the parents of the study participants lived together. 90% of the participants in the study lived with their parents. Chi-square test did not show a significant difference between the control and experimental groups in qualitative demographic characteristics and independent t-test did not show a significant difference in the mean of quantitative demographic variables of the subjects, which indicates that the two groups were homogeneous in terms of demographic qualitative

characteristics ( $P > 0.05$ ). **Table.1** shows that after the training course on emotional intelligence components, the average test anxiety for medical students who were in the control group was more than other groups and this amount was lower for non-medical students who were in the training group than other groups. In the study of the effect of emotional intelligence components training on test anxiety of medical sciences and non-medical sciences students, the results of analysis of covariance showed that the trained group had less anxiety after the course and this difference was statistically significant (**Table.2**). But the factor of the field of study did not have a significant difference in test anxiety and the pre-test score also showed a significant effect in the model. Multiple regression analysis to determine the effect of demographic characteristics on test anxiety showed that only two variables of field of study and father's age were significant at the 5% level. Father's age showed a negative effect on anxiety, so that people with older fathers also were more anxious.

**Table-1:** Mean and standard deviation of exam anxiety after the training course for the study groups.

Groups	Major	Number	Before the intervention	After the intervention	Partial Eta Squared		
			Mean (SD)	Mean (SD)	Group	Major	Reaction
Training group	Medical Sciences Students	21	20.285 (2.759)	17.85 (2.833)	0.384	0.002	0.014
	Non- Medical Sciences Students	67	18.253 (4.840)	16.447 (4.307)			
	Total	88	18.738 (4.504)	16.784 (4.035)			
Control group	Medical Sciences Students	21	19.333 (3.055)	19.428 (3.202)			
	Non- Medical Sciences Students	69	17.942 (5.232)	17.956 (5.056)			
	Total	90	18.266 (4.833)	18.300 (4.715)			
Total	Medical Sciences Students	42	19.809 (2.915)	18.642 (3.09)			
	Non- Medical Sciences Students	136	18.095 (5.027)	17.213 (4.746)			
	Total	178	18.500 (4.666)	17.550 (4.445)			

**Table-2:** Results of analysis of covariance for test anxiety after training.

Source of changes	Total squares	Degrees of freedom	Average squares	F	P-value
Group	167.739	1	167.739	125.250	<0.001
Major	0.402	1	0.402	0.300	0.585
Pre-test	3096.157	1	3096.157	2311.895	<0.001
Error	233.026	174	1.339	--	--

#### 4- DISCUSSION

This study aimed to determine the effect of teaching emotional intelligence components on exam anxiety of medical sciences and non-medical sciences students of Tehran Islamic Azad University of Medical Sciences. The results of the present study showed that the level of test anxiety in medical and non-medical groups of Tehran Medical University in the intervention group after training on emotional intelligence components is significantly reduced. This result was in line with the results of the researches of Nourian et al. (13), Yarmohammadian and Sharafi (14), and Karshki et al. (7). Karshki et al. (2011) found in their research that emotional intelligence training could reduce students' test anxiety. The results of the present study showed that although the training of emotional intelligence components reduced test anxiety, there was no difference between medical and non-medical groups in this field which was in line with the results of Einalou and Khosrojerdi (15) entitled "the comparison of exam anxiety levels of students in different disciplines of high schools" and in this study, no significant difference was found between different disciplines, but the present study was in contradiction with the research of Mohammadi and Parandin (16) entitled "exam anxiety level of students of Kermanshah University of Medical Sciences". Midwifery students' test anxiety was higher than other students' anxiety levels. Based on the results of the

present study, it can be said that the structure of emotional intelligence and its components can possibly play a key role in the symptoms of students' test anxiety. Students who experience more anxiety symptoms have less understanding of the nature of their emotions and, on the other hand, have less ability to overcome negative emotional experiences such as test anxiety. In other words, these people have problems with emotional intelligence and its components. This result can explain the problem of these people in emotional adjustment, which is an indicator of damage to the structure of emotional intelligence for these people. According to the model of Mennin et al. (17), improvement in emotion regulation leads to improvement of anxiety syndrome. Also, students who have high emotional intelligence have personality components such as self-confidence, stress management power, personality flexibility and empathy, independence, self-awareness and problem-solving ability. These components of personality in turn improve test anxiety. These factors and functions of emotional intelligence can reduce the anxiety of all students, and this factor has led to no difference between medical students and other medical students. Multiple regression analysis to determine the effect of demographic characteristics on test anxiety showed that only two variables of field of study and father's age showed a negative effect on anxiety, so that people with older fathers also were more anxious. Regarding the field of study, this study was in line with

the results of Moaddeli and Ghazanfari Hesamabadi's research (18). Moaddeli and Ghazanfari Hesamabadi have considered factors such as the difficulty of the course, the exam question designing by the professors and the state of the educational system effective on the students' exam anxiety. Regarding the father's age, it can be said that older fathers had more free time and focused more on their children's performance, and followed their children's grades and academic progress and spent more time for them, and this had added to their children's test anxiety.

#### 4-1. Study Limitations

One of the limitations of the research was that the subjects were selected from a certain statistical population, so the research results can only be generalized to this statistical population and caution should be exercised in generalizing it. Also, human considerations could be in response to individuals. Questionnaires could be effective and the choice of measurement tools and methods used to collect data could be another limiting factor for research findings.

#### 5- CONCLUSION

According to the results of research on the effectiveness of emotional intelligence training on students' test anxiety, it was recommended that these training programs be held as a group for students, especially students with high test anxiety, as well as software and educational books could be made available to students in this regard.

**6- CONFLICT OF INTEREST:** None.

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